No. 8130

United States

Circuit Court of Appeals

For the Ninth Circuit.

INLAND POWER AND LIGHT COMPANY,
a corporation,

Appellant,

vs.

FAY M. GRIEGER and MARY LOIS GRIEGER,

Appellees.

Transcript of Record

Upon Appeal from the District Court of the United States for the Western District of Washington, Southern Division.

FILED

MAR 18 1936

PAUL P. O'BRIEN,
CLERK

PARKER PRINTING COMPANY, 545 SANSOME STREET, SAN FRANCISCO

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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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COUNSEL OF RECORD:

For Plaintiff and Appellee:

Mr. WILLIAM B. SEVERYNS,
405 Arctic Building,
Seattle, Washington.
Mr. WM. P. LORD,
Mr. ARTHUR I. MOULTON,
Mr. HARRY L. GROSS,
620 Spalding Building,
Portland, Oregon.
Mr. BEN ANDERSON,
Corbett Building,
Portland, Oregon.

For Defendant and Appellant:

Messrs. ELLIS & EVANS,
Rust Building,
Tacoma, Washington.
Messrs. JOHN A. LAING and
HENRY S. GRAY,
Public Service Building,
Portland, Oregon.
Messrs. HAYDEN, METZGER & BLAIR,
Tacoma Bldg.,
Tacoma, Washington.

In the District Court of the United States for the Western District of Washington, Southern Division.

No. 8352

FAY M. GRIEGER and MARY LOIS GRIEGER,
Plaintiffs

vs.

INLAND POWER AND LIGHT COMPANY,
a corporation,
Defendant.

SECOND AMENDED COMPLAINT.

Now come plaintiffs and leave of court being had, bring this, their Second Amended Complaint herein, and for cause of action against defendant, allege:

I.

That during all the times herein mentioned the defendant was and now is a corporation, organized under the laws of the State of Oregon, and is the owner and operator of a certain power dam impounding the waters of the Lewis River, which dam is located about twelve miles north and east of the city of Woodland, Washington, and the said defendant has been the owner and operator of said dam for several years last past.

II.

That during all the times herein mentioned plaintiffs were and now are husband and wife, and

plaintiff Fay M. Grieger was and now is the owner of the following described land, located in Clark County, Washington, to-wit:

> Lot No. 4 of Section 4, and Lots Nos. 4, 5 and 10, and the Southeast Quarter of the Northeast Quarter of Section 9, Township 5 North, Range 1 East of the Willamette Meridian, excepting however, a strip of land forty rods wide off of and along the entire east side thereof, the balance containing 100.66 acres, more or less. [1*]

III.

That said Lewis River by nature follows along the west boundary of plaintiffs' said lands, and plaintiffs operate said lands for farming purposes, and maintain thereon their home, farm buildings, fences and farm improvements.

IV.

That in the construction of its aforesaid dam the defendant erected said dam at a point on the Lewis River where the said river passes through a narrow gorge, and the said dam was constructed to a height of approximately 240 feet, and so designed that save for the flood gates hereinafter mentioned and described, the same would impound the waters of the Lewis River to a height of approximately 240 feet and for a distance back of the said dam of approximately fourteen miles, thereby forming a

*Page numbering appearing at the foot of page of original certified Transcript of Record.

body of slack water commonly known as Lake Merwin, which body of water covers approximately 4,000 acres. That defendant, in the construction of its said dam, equipped the same with four flood gates, each extending approximately 39 feet laterally across the said river, and approximately 32½ feet high, and an additional flood gate extending ten feet laterally across said river and approximately 32½ feet high. That the flood gates were so designed that when opened great quantities of water would be discharged through them, and the said gates were so constructed that by means thereof, when in proper working order, the water accumulated in the said lake would be discharged through the said gates, and the level of the water behind the dam would be lowered to approximately 205 feet, according to the gauge at the said dam maintained by defendant, and so that there could be discharged through the said flood gates waters accumulated in the said lake to a depth in excess of 35 feet. The defendant, in the construction of said dam, carelessly and negligently erected immediately below the base thereof, a power plant and power-generating machinery, so situated that if [2] the waters rose in said lake above the level of approximately 240 feet by said gauge, the same would be discharged over the top of said dam into and upon defendant's said power plant, and that great damage would be inflicted thereupon, so that it was impracticable for defendant to maintain said dam with the aforesaid flood gates closed and thereby

permit the waters of said river to accumulate in said lake, and ultimately pass over the top into said dam. Defendant likewise for the protection of its said power plant, erected an apron with bulkheads at the sides thereof, so designed as to form a chute from the said gates directing water released thereon into the current of the said Lewis River, and so designed as to cause water released by means of the said flood gates to flow down stream in the said Lewis River below defendant's said dam, and thereby to increase not only the quantity of water in said Lewis River below the dam, but the force and violence of such water as might be released by means of flood gates.

V.

That for a period in excess of thirty days prior to the 21st day of December, 1933, there was and had been great and unusual rainfall in the watershed of the aforesaid Lewis River above the defendant's said dam, and the waters of said Lewis River above defendant's said dam were thereby caused to rise, and the flow thereof was increased, but notwithstanding the said rainfall and consequent rise of the water in said Lewis River, and notwithstanding the aforesaid careless and negligent construction and maintenance of its said dam, and the likelihood that in event of the rise of waters therein contained, defendant would be compelled to open its said flood gates and discharge the accumulated water of said dam through said flood gates, the defendant carelessly and negligently

permitted the water of Lake Merwin to rise and remain at a gauge level of 235 feet and above [3] the said point, and carelessly and negligently failed to open its said flood gates sufficiently to permit the accumulated waters of the said stream to flow gradually past its said dam, as they were wont to do by nature. That the defendant thereby held and maintained in and behind its said dam a quantity of water of such great volume that there was great and imminent danger that if defendant were compelled to open all its flood gates the flow of the waters in the said Lewis River below the said dam and past the plaintiffs' said property would be so enhanced in volume and accelerated in speed that great and irreparable damage would be inflicted upon plaintiffs' said property.

VI.

That on or about the 20th day of December, 1933, due to the continuing rainfall in the aforesaid watershed, the waters of said Lewis River rose rapidly for a period of about eight hours, and thereafter, for a period of about 24 hours rose gradually, and the waters so impounded by defendant and by the aforesaid dam increased in volume and rose to a gauge height in the said dam of approximately 237½ feet, and there was, by reason thereof, and by reason of the careless and negligent manner in which defendant had constructed its said power house at the immediate base of its said dam, great and imminent danger that the said waters continuing to rise in the said

dam would be discharged over the top thereof and into and upon the defendant's said powerhouse. Thereupon, wholly due to the careless and negligent maintenance and construction of defendant's said dam and powerhouse, and wholly due to defendant's carelessness and negligence in failing to open the said flood gates sufficiently and thereby permitting the waters in the said dam to rise to the height aforesaid, and without care or regard to the damage thereby likely to be inflicted upon plaintiffs' said property, defendant carelessly and negligently and [4] without warning to plaintiffs, and without regard to the damage which might thereby be inflicted upon their property, on or about midnight of December 21, 1933, opened all its aforesaid floodgates and caused thereby vast quantities of water, by defendant so carelessly impounded by its said dam, to be suddenly and with great force discharged through its said flood gates and over the said apron directly into the current of said Lewis River, and by reason thereof the flow of waters in the said Lewis River was increased in volume, and accelerated in force, and thereupon, wholly due to the negligence of defendant in the construction of its said dam and power plant and flood gates, backwater was caused to be formed behind the outlet of said apron and water and debris was caused to enter the said power house and the machinery, by defendant maintained therein and by it designed to open and close its said flood gates, was disabled, and defendant was unable to close its said flood gates, and by reason of the negligence of the defend-

ant as aforesaid, the same were forced to remain open for a period approximating twenty-four hours, and the waters accumulated in the said lake behind defendant's said dam, to the extent of approximately 17,000 acre-feet, were discharged through the said flood gates, in addition to the normal flow of the waters of said Lewis River into the channel of the said Lewis River with great force and violence, and during the said period of twenty-four hours the waters of the said Lewis River were caused to be increased in volume and accelerated in force so that the same flowed over the plaintiffs' aforesaid land with great volume and with great force, and cut away portions of the soil in said land, and destroyed the usefulness thereof for farming purposes, and deposited vast quantities of sand and rocks and debris upon the said land, and destroyed plaintiffs' crops growing thereon, and plaintiffs' fences thereon, all to plaintiffs' damage in the sum of Fifteen Thousand One [5] Hundred Fifty Dollars ($15,150.00).

That an itemized statement of the damage inflicted upon plaintiff's lands by the carelessness and negligence of defendant is appended hereto, marked "Exhibit A" and made a part hereof.

VII.

That plaintiffs are residents and citizens of the State and District of Washington, and citizens of a different state than defendant.

VIII.

That defendant is a citizen of the State of Oregon and diversity of citizenship exists between plaintiffs and defendant.

IX.

That the amount in controversy in this cause is greater than the sum of $3,000.00, exclusive of interest and costs.

WHEREFORE plaintiffs pray for judgment against defendant for the sum of Fifteen Thousand One Hundred Fifty Dollars ($15,150.00), and for their costs and disbursements incurred herein.

WM. B. SEVERYNS,
405 Arctic Bldg. Seattle, Wash.
WM. P. LORD,
HARRY L. GROSS,
Attorney for Plaintiffs. [6]

EXHIBIT A.

The following described land and personal property of plaintiffs was damaged and destroyed by the negligent acts of defendant as alleged:

71 acres plaintiffs' lands	$ 9,950.00
50 acres pasture lands (included in above) destroyed for pasture purposes; monthly rental value of $60.00 per month for 7 months	420.00
Seeding aforesaid 50 acres of pasture land	80.00

34 acres growing crop of oats and veatch, at $25 per acre (21 acres included in the above 71 acres destroyed, 13 acres in addition flooded at time of injury but now tillable)	850.00
2300 feet new wire fence	
3000 feet wire cross fencing	500.00
Standing timber destroyed	200.00
Loss by severance (Plaintiff uses within property as dairy ranch, wherein he has maintained 37 head of cattle, and in 1930 built a modern barn approximately 47x80, part cement, at cost of $2500, and in 1929 built a modern house in addition to one already upon the premises, at a cost of $2,250.00. The destruction of more than two-thirds of the land has caused the depreciation in the value of the establishment for dairy purposes and to sustain the above buildings in the amount listed)	3,150.00
	$15,150.00

[7]

[Verification and Service.]

[Endorsed]: Filed Mar. 9, 1935. [8]

[Title of Court and Cause.]

ANSWER TO SECOND AMENDED COMPLAINT.

Comes now the defendant and for answer to the plaintiffs' second amended complaint herein, denies, admits and alleges:

I.

Admits the allegations of paragraph I thereof.

II.

Answering paragraph II thereof, defendant admits that the plaintiffs during all of the times mentioned in said second amended complaint were and now are husband and wife, and that said plaintiffs were in possession of the lands therein described, but this defendant has no knowledge or information sufficient to form a belief as to whether the plaintiff, Fay M. Grieger, was at any time or now is the owner of said described land or as to the acreage thereof, and therefore denies said allegations.

III.

Answering paragraph III thereof, defendant admits that the plaintiffs operated said lands for farming purposes and maintained thereon their home, farm buildings, fences, and farm improvements, but denies that said Lewis River by nature follows along the west boundary of plaintiffs' said lands.

IV.

Answering paragraph IV thereof, defendant admits that its said dam was constructed at a point

on the Lewis River where the said river passes through a narrow gorge, and that the waters impounded by said dam formed a [9] body of slack water commonly known as Lake Merwin, which body of water covers approximately 4,000 acres and extends back of said dam a distance of approximately 12 miles; denies that said dam was constructed to a height of 240 feet, but alleges the fact to be that said dam was constructed to an elevation of approximately 240 feet above sea level, U. S. G. S. datum, and denies that said dam was so designed that save for its flood gates it would impound the waters of said Lewis River to a height of 240 feet, or to any elevation in excess of 238.35 feet, above said datum, with the gates closed, and alleges the fact to be that it was impossible to impound said waters behind said dam to an elevation in excess of approximately 238.35 feet above said datum without spilling water over said gates, if closed. Admits that said dam is equipped with four flood gates, each extending approximately 39 feet laterally across the said river and approximately 33.35 feet high, and with an additional flood gate extending 10 feet laterally across said river and approximately 33.35 feet high. Admits that said flood gates were so designed that, when opened, water would be discharged through them, and that when all of said gates were fully opened the water behind said dam could be lowered to the gauge elevation of approximately 205 feet above said datum; but denies that the waters accumulated

in said lake could thereby be discharged through said gates to a depth in excess of 35 feet, or to any depth in excess of approximately 33.38 feet. Admits that the defendant erected downstream from said dam a power plant and power generating machinery, but denies that said power plant or power generating machinery were erected immediately below the base of said dam or were so situated that if the waters rose in said lake above the level of approximately 240 feet elevation by said gauge, or to any other elevation, the same would be discharged over the top of said dam into and upon defendant's said power plant, and denies that great or any damage would thereby be inflicted thereupon, and denies that in the location, erection or construction of said power plant or power generating machinery the defendant was in any respect careless or negligent, but admits that it was impracticable to permit the waters of said river so to accumulate in said lake as to flow or pass over the top of said dam, and alleges the fact to be that said dam was not designed so to discharge the waters accumulated in said lake. Admits that [10] said defendant erected an apron with guide walls immediately below the gates of said dam, and so designed as to cause water released by means of and through said flood gates to flow downstream in the said Lewis River below defendant's said dam, but denies that said chute or guide walls were erected for the protection of said power plant, and denies that the effect of said apron or of said guide walls was to increase the quantity of such

water as might be released by means of said flood gates, and denies that the effect thereof was to increase the force or violence of said water except at that point and for a short distance downstream from said apron; and denies each and every other allegation of said paragraph IV except as and to the extent hereinbefore admitted, qualified or alleged.

V.

Answering paragraph V thereof, defendant admits and alleges that for approximately 17 days prior to the 21st day of December, 1933, there was and had been great and unusual rainfall in the watershed of the aforesaid Lewis River above the defendant's said dam, and that the waters of said Lewis River above said dam were thereby caused to rise and the flow thereof was increased; admits that the defendant permitted the waters of Lake Merwin to rise and remain at a gauge elevation of approximately 235 feet, that being the elevation at which said lake was normally maintained, but denies each and every other allegation in said paragraph V contained, and expressly denies that as to any of the matters or things in said paragraph alleged this defendant was in any respect or at any time careless or negligent.

VI.

Answering paragraph VI thereof, defendant admits that on or about the 20th or 21st day of December, 1933, and due to the continuing rainfall in the aforesaid watershed, the waters of said Lewis

River above defendant's said dam rose rapidly and increased in volume, and rose to a gauge elevation above said dam of approximately 237½ feet; admits that there was great and imminent danger that said waters continuing to rise in the said dam would be discharged over the top of said dam; admits that the waters of said Lewis River flowed over plaintiffs' aforesaid lands and did [11] certain damage thereto, as to the nature, extent and pecuniary amount of which defendant is uninformed; but defendant expressly denies that said plaintiffs were damaged in the sum of $15,150.00, or any other sum, by reason of any negligent act or omission of this defendant, and denies that at any time in the construction, maintenance or operation of said dam, or of said flood gates, or in any other respect, this defendant was at any time careless or negligent.

That this defendant has no knowledge or information sufficient to form a belief as to whether or not the itemized statement of the alleged damage caused to plaintiffs' lands or property by said flood waters is as set forth in plaintiffs' "Exhibit A", attached to their said complaint, and therefore denies said allegation; and this defendant denies that any damage to said lands or property caused by said flood waters, or otherwise, was due to carelessness or negligence of this defendant, and denies that this defendant is in any way or manner liable for said damage or any part thereof; and defendant denies each and every other allegation in said para-

graph VI contained, except as and to the extent hereinbefore admitted, qualified or alleged.

VII.

Admits the allegations of paragraph VII thereof.

VIII.

Admits the allegations of paragraph VIII thereof.

IX.

Admits the allegations of paragraph IX thereof.

SECOND.

For a further and affirmative defense to plaintiffs' second amended complaint, defendant alleges:

I.

Defendant here reiterates, repeats and adopts each and all of the allegations, averments, denials and admissions of its foregoing answer to plaintiffs' second amended complaint herein, and makes the same, and each [12] and all of them, a part of this further and affirmative defense with like force and effect as if the same were set forth herein verbatim.

II.

That the Lewis River referred to in plaintiffs' second amended complaint is a navigable stream, and prior to the construction of defendant's said dam defendant was required to obtain and did obtain the permission of the United States government, acting by and through the Federal Power Commission, and also the permission of the State of Wash-

ington, acting by and through its Department of Conservation and Development for the construction and erection of said dam upon said stream, and that said dam, including its flood gates and facilities, and said power house and its facilities, were constructed in all respects in accordance with plans submitted to and approved by the said United States of America, acting by and through said Federal Power Commission, and also by the State of Washington, acting by and through said Department of Conservation and Development, and said dam and power house and their respective appurtenant facilities at the time of their construction represented and do represent the best engineering skill and ability, and the construction, operation and maintenance of said dam has at all times been in accordance with recognized and accepted engineering standards and free from negligence or carelessness of any kind or nature.

III.

That for many days prior to the 21st day of December, 1933, an unprecedented rainfall had prevailed throughout the western part of the state of Washington with the result that most of the streams of said state reached flood proportions. That said rainfall throughout the watershed of the Lewis River was extraordinary and unprecedented, and was combined with abnormally high temperatures for the season of the year, and caused the snows in said watershed to melt with unusual rapidity. That the combination of said rainfall, high temperatures

and melting snow resulted in unprecedented flood conditions in said stream, and by reason thereof all of the lands adjacent to said Lewis River were subject to unusual and [13] unprecedented hazards and perils from said flood waters. That at all times during said flood this defendant maintained and operated the gates of its said dam in accordance with the best engineering practice and skill and consistently with the flood perils existing at said time and place, and solely with the purpose of minimizing the damage that would inevitably result to lower landowners on said stream by reason of the natural run-off of said flood waters; and this defendant alleges the fact to be that said flood was an act of God for which this defendant was and is in no way responsible or liable, and that all damage sustained by plaintiff, for which they seek recovery in the above entitled action, was solely due to said unprecedented flood; that none of the damage suffered by plaintiffs from said flood waters was due to or resulted from any negligent act or omission of this defendant in its construction, maintenance or operation of said dam, flood gates, power house or other facilities, and defendant alleges that it was not at any time or in any way or manner careless or negligent in the construction, maintenance or operation of said dam, flood gates, power house or other facilities, or otherwise.

WHEREFORE, having fully answered said second amended complaint, defendant prays that the same may be dismissed, and that defendant recover

of and from plaintiffs its costs and disbursements incurred herein.

ELLIS & EVANS
JOHN A. LAING and
HENRY S. GRAY
Attorneys for Defendant [14]

[Verification and Service.]

[Endorsed]: Filed May 31, 1935. [15]

[Title of Court and Cause.]

REPLY.

Now come plaintiffs and replying to defendant's answer and to its further and affirmative defense to plaintiffs' second amended complaint, deny each and every allegation, matter and thing therein contained, except so much thereof as is expressly set forth and alleged in and by plaintiffs' Second Amended Complaint.

WHEREFORE plaintiffs reiterate the prayer of their Second Amended Complaint.

WM. B. SEVERYNS
WM. P. LORD
HARRY L. GROSS
Attorneys for Plaintiffs.

[Verification and Service.]

[Endorsed]: Filed Jun 25, 1935. [16]

[Title of Court and Cause.]

VERDICT.

We, the jury empanelled and sworn to try the issues in the above-entitled cause, find for the Plaintiffs and assess their damages in the sum of Four Thousand & 00/100 Dollars ($4000.00).

W. M. BARRETT,
Foreman.

[Endorsed]: Filed Oct. 8, 1935. [17]

[Title of Court and Cause.]

PETITION FOR NEW TRIAL.

Comes now the defendant, Inland Power & Light Company, a corporation, by its attorneys, Ellis & Evans, John A. Laing and Henry S. Gray, and respectfully petitions this Honorable Court for a new trial in this cause, under Rule 74 of the Rules of this Court, on the following grounds:

1. Abuse of discretion by which the defendant was prevented from having a fair trial.

2. Excessive damages appearing to have been given under the influence of passion or prejudice.

3. Insufficiency of the evidence to justify the verdict, to-wit:

(a) Insufficiency of the evidence to show that any negligent act of the defendant caused any of the damage to plaintiffs' land;

(b) Insufficiency of the evidence on damages from which the jury could determine that the plaintiffs' property was damaged in the sum of $4,000.00 or any other sum by negligence of the defendant;

(c) Insufficiency of the evidence to show that surplus water allowed to flow in the Lewis River on December 22nd, 1933, caused any damage;

(d) Insufficiency of the evidence to show what, if any, damage was done to the plaintiffs' land by nature or the natural flow of the Lewis River;

(e) Insufficiency of the evidence to show any actionable negligence on the part of defendant resulting in injury to the plaintiffs' land.

4. Errors in law occurring at the trial and excepted to at the time by the defendant, to-wit: [18]

(a) Error in law in permitting the witnesses, Carl E. Insull and Fay M. Grieger, or either of them, to testify as to the reasonable market value of the plaintiffs' lands immediately before and immediately after the December, 1933, flood, each of whom by its own testimony having affirmatively shown that he was not qualified so to testify, and their testimony being highly prejudicial to the defendant.

(b) Error in law in over-ruling and denying the defendant's motion to require the plaintiffs, prior to the introduction of any evidence, to elect upon which of their two grounds of alleged negligence they would proceed, namely, upon the alleged negligence of the defendant in failing, on the one hand, so to construct its power plant as to make it practicable to maintain the dam with its flood gates closed and to impound the waters in said lake to such an extent that they could overflow the dam without inflicting injury upon the power

house, as alleged in paragraph IV of the amended complaint, and, on the other hand, the alleged negligence of the defendant in failing so to operate the gates of said dam that the waters of said stream would flow past said dam "as they were wont to do by nature", as alleged in paragraph V of said complaint; said motion being based upon the ground that said two grounds of alleged negligence were inherently inconsistent, contrary with and destructive of each other in this, to-wit: that the storage or accumulation of any quantity of water whatsoever inherently precludes and renders impossible the permitting of said waters to run as they were wont to do by nature.

(c) Error in law in over-ruling and denying the defendant's motion for a non-suit, which motion was based upon the following grounds, severally, to-wit:

1st, a total failure of proof of actionable negligence.

2nd, that the evidence conclusively shows there was unprecedented flood which caused the damage to the plaintiff's property, regardless of any conduct of the defendant.

3rd, that the evidence affirmatively shows the exercise of reasonable care by the defendant.

4th, that any verdict permitted to be returned to the court by the jury on [19] the evidence as it now stands would be purely speculative and without basis for computation.

This petition is based upon the records and files of this cause, the pleadings, the court reporter's

transcript of the testimony and upon the Court's minutes of the trial.

ELLIS & EVANS
JOHN A. LAING, and
HENRY S. GRAY
Attorneys for Defendant

[Verification and Service.]

[Endorsed]: Filed Oct. 19, 1935. [20]

[Title of Court.]

RECORD OF PROCEEDINGS.

At a regular session of the United States District Court for the Western District of Washington, held at Tacoma, in the Southern Division thereof on the 23rd day of November, 1935, the Honorable Edward E. Cushman, United States District Judge presiding, among other proceedings had were the following, truly taken and correctly copied from the Journal record of said Court as follows:

[Title of Cause.]

RECORD OF HEARING.

On this 23rd day of November, 1935, Motion for New Trial comes regularly on for hearing, plaintiffs appearing by W. P. Severyns and the defendant appearing by R. E. Evans, one of its attorneys. Motion is argued by counsel for defendant. Motion for New Trial is denied and exception is allowed defendant. [21]

United States District Court, Western District of Washington, Southern Division.

No. 8352.

FAY M. GRIEGER and MARY LOIS GRIEGER,
Plaintiffs,

vs.

INLAND POWER & LIGHT COMPANY,
a corporation,
Defendant.

JUDGMENT ON THE VERDICT.

This day, to-wit: November 25th, 1935, this cause came on for hearing upon the Motion of Plaintiffs for a Judgment on the Verdict, which verdict was returned to the Court on the 8th day of October, 1935 and is as follows:

> "We, the jury empanelled and sworn to try the issues in the above-entitled cause, find for the Plaintiffs and assess their damages in the sum of Four Thousand & no/100 Dollars ($4,000.00).
>
> W. M. Barrett, Foreman."

the plaintiffs appeared by their counsel, Wm. P. Lord and the defendant not appearing, and it further appearing to the Court that Plaintiffs' motion for Judgment in accordance with the said verdict should be allowed and the Court being fully advised in the premises,

IT IS THEREFORE ORDERED AND ADJUDGED that the Plaintiffs have of and recover from the defendant the sum of Four Thousand Dollars ($4,000.00), together with their costs and disbursements herein to be taxed.

Done in open Court this 25th day of November, 1935.

(Signed) EDWARD E. CUSHMAN
Judge

[Service.]

[Endorsed]: Filed Nov. 25, 1935. [22]

[Title of Court and Cause.]

STIPULATION FOR EXTENSION OF TIME FOR SETTLEMENT OF BILL OF EXCEPTIONS.

It is hereby stipulated by the parties to the above entitled action, by their respective attorneys of record herein, that the defendant may be allowed ninety (90) days from the date of entry of the verdict in said action, to-wit, to and including the 6th day of January, 1936, within which time to prepare, serve and tender for settlement its bill of exceptions in said action, and that an order in conformity with this stipulation may be entered by the above entitled court, or by the judge thereof,

upon application of said defendant and without other or further notice thereof.

Dated this 11th day of October, 1935.

WM. P. LORD
GROSS & ANDERSON
Attorneys for Plaintiffs.
ELLIS & EVANS
JOHN A. LAING and
HENRY S. GRAY
Attorneys for Defendant

[Endorsed]: Filed Oct. 15, 1935. [23]

[Title of Court and Cause.]

ORDER.

This cause coming on at this time for hearing upon the application of the defendant Inland Power & Light Company, a corporation, for an extension of time within which to prepare, serve and tender for settlement its bill of exceptions in this action, and it appearing to the Court from the written stipulation on file in this cause that the parties hereto have stipulated that the time may be extended to and including the 6th day of January, 1936;

NOW, THEREFORE, IT IS BY THE COURT ORDERED that the time within which defendant shall have to prepare and serve, and tender for settlement, its bill of exceptions in this action, be, and is hereby extended to and including the 6th day of January, 1936.

Done in open court this 15 day of October, 1935.

EDWARD E. CUSHMAN
Judge

[Endorsed]: Filed Oct. 15, 1935. [24]

[Title of Court and Cause.]

STIPULATION.

It is hereby stipulated by and between the parties hereto, by their attorneys of record herein, that the defendant's time be extended to and including the third day of February, 1936, within which to present, amend, file, settle and/or otherwise prepare bill of exceptions herein on appeal, and that without other or further notice an order may be entered herein in conformity with this stipulation.

It is further stipulated that by order of the above entitled Court, and without notice, the present term of the above entitled Court may be extended and carried over into and to include all of the present term and such further time as may be necessary for the purpose of permitting and allowing defendant to perfect an appeal herein, and to do all acts and things necessary therefor, including all matters pertaining to defendant's bill of exceptions herein.

Dated this 19th day of December, 1935.

BEN ANDERSON
Of Attorneys for Plaintiff
HENRY S. GRAY
Of Attorneys for Defendant.

[Endorsed]: Filed Dec. 23, 1935. [25]

[Title of Court and Cause.]

ORDER.

THIS CAUSE coming on at this time for hearing upon the application of the defendant Inland Power & Light Company a corporation, for an extension of time within which to prepare, serve and tender for settlement its bill of exceptions in this action, and it appearing to the Court from the written stipulation on file in this cause that the parties hereto have stipulated that the time may be extended to and including the 3rd day of February, 1936;

NOW, THEREFORE, IT IS BY THE COURT ORDERED that the time within which defendant shall have to prepare and serve, and tender for settlement, its bill of exceptions in this action, be, and is hereby extended to and including the 4th day of February, 1936.

Done in open court this 23rd day of December, 1935.

EDWARD E. CUSHMAN
Judge

[Endorsed]: Filed Dec. 23, 1935. [26]

[Title of Court and Cause.]

PETITION FOR APPEAL.

To the Honorable E. E. Cushman, District Judge of the above entitled court:

NOW COMES Inland Power & Light Company, a corporation, the above named defendant, by its

attorneys of record herein, and respectively shows that on the 8th day of October, 1935, a jury, duly empanelled, rendered a verdict in the sum of Four Thousand Dollars ($4,000.00) against said defendant, the petitioner herein, and in favor of Fay M. Grieger and Mary Lois Grieger, the plaintiffs herein, and that upon said verdict a final judgment was on the 25th day of November, A. D. 1935, entered herein against said defendant.

That your petitioner, feeling itself aggrieved by the said judgment entered herein as aforesaid, hereby petitions the Court for an order, allowing it to appeal to the Circuit Court of Appeals of the United States for the Ninth Judicial Circuit, pursuant to the laws of the United States in such case made and provided, for the reasons specified in its assignment of errors filed concurrently herewith, and that citation should issue as provided by law, and that the transcript of the record in said cause, duly authenticated, be sent to the said United States Circuit Court of Appeals for the Ninth Judicial Circuit.

WHEREFORE, premises considered, your petitioner prays that an appeal in its behalf to the United States Circuit Court of Appeals as aforesaid, sitting in San Francisco in said circuit, for the correction of the errors complained of and herewith assigned, be allowed, and that an order be [27] made and entered herein that citation be issued as provided by law, and that the transcript of the record herein, duly authenticated, be sent to the United States Circuit Court of Appeals for the

Ninth Judicial Circuit, and fixing the amount of security to be given by defendant to said plaintiffs, conditioned as the law directs, and that, upon the giving of such bond as may be required, all further proceedings herein may be stayed and suspended until the determination of said appeal by said Circuit Court of Appeals.

ELLIS & EVANS
JOHN A. LAING and
HENRY S. GRAY
Attorneys for Defendant

[Service.]

[Endorsed]: Filed Jan. 18, 1936. [28]

[Title of Court and Cause.]

ASSIGNMENT OF ERRORS.

NOW COMES Inland Power & Light Company, a corporation, defendant in the above numbered and entitled action, and, in connection with its petition for an order allowing an appeal in said action, assigns the following errors which said defendant avers occurred upon the trial thereof, and upon which it relies to reverse the judgment entered herein, as appears of record:

I.

That the Court erred in denying said defendant's motion for non-suit, made at the close of the plaintiff's case, upon the several grounds that: (1) the plaintiffs had wholly failed to prove any actionable

negligence; (2) that the evidence conclusively showed that an unprecedented flood caused the damage to plaintiffs' property, regardless of any conduct of the defendant; (3) that the evidence affirmatively showed reasonable care by the defendant; and (4) that any verdict rendered on the evidence would be purely speculative and without basis for computation. (Transcript of Testimony, 419, 420.) (Bill of Exceptions, 110, 111.)

II.

That the Court erred in entering judgment on the verdict herein, in that said verdict was against law and unsupported by the evidence.

III.

That the Court erred in denying said defendant's motion for a new trial herein, in that the Court thereby erred as a matter of law, and failed [29] to exercise a sound judicial discretion.

WHEREFORE said defendant prays that the judgment of said Court be reversed.

ELLIS & EVANS
JOHN A. LAING and
HENRY S. GRAY
Attorneys for Defendant

[Service.]

[Endorsed]: Filed Jan. 18, 1936. [30]

[Title of Court and Cause.]

ORDER ALLOWING APPEAL.

It appearing that the defendant in the above entitled cause has filed in this court a petition for an appeal from the final judgment herein dated and entered November 25, 1935, together with an assignment of errors and prayer for reversal;

It is hereby ORDERED that an appeal as prayed for in said petition be, and it is hereby, allowed, and that Citation be issued as provided by law, and that a transcript of the record herein, duly authenticated, be sent to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, and that the bond on appeal, conditioned as required by law, is hereby fixed in the sum of Six Thousand Dollars ($6,000.00), and that said bond shall operate as a supersedeas and cost bond, and shall stay and suspend all further proceedings in this court until the determination of said appeal.

Dated this 18th day of January, 1936.

EDWARD E. CUSHMAN
District Judge.

[Endorsed]: Filed Jan. 18, 1936. [31]

[Title of Court and Cause.]

COST BOND ON APPEAL AND SUPERSEDEAS.

KNOW ALL MEN BY THESE PRESENTS that we, INLAND POWER & LIGHT COM-

PANY, a corporation, as Principal, and NEW YORK CASUALTY COMPANY, a corporation organized and existing under and pursuant to the laws of the State of New York, and duly licensed in the State of Washington to transact the business of surety and to execute and deliver bonds of this character and amount therein, as Surety, are held and firmly bound unto Fay M. Grieger and Mary Lois Grieger, the plaintiffs in the above entitled action, in the full and just sum of Six Thousand Dollars ($6,000) to be paid to the said Fay M. Grieger and Mary Lois Grieger, their executors, administrators or assigns, to which payment well and truly to be made we bind ourselves, our respective successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, lately at a regular term of the District Court of the United States for the Western District of Washington, Southern Division, sitting at Tacoma in said district, in an action pending in said court between Fay M. Grieger and Mary Lois Grieger, as plaintiffs, and Inland Power & Light Company, a corporation, as defendant, Cause No. 8352 on the law docket of said court, final judgment was rendered on the 25th day of November, 1935, against said Inland Power & Light Company for the sum of Four Thousand Dollars ($4,000.00), with interest thereon at the rate of six per cent (6%) per annum from the 8th day of October, 1935, and said Inland Power & Light Company, a corporation, has been allowed an appeal to

reverse the judgment [32] of said Court in the aforesaid action and a citation directed to the said Fay M. Grieger and Mary Lois Grieger, appellees, citing them to be and appear before the United States Circuit Court of Appeals for the Ninth Judicial Circuit, to be holden at San Francisco in the State of California, according to law, within thirty (30) days from the date thereof;

NOW the condition of the above obligation is such, that if the said Inland Power & Light Company shall prosecute its appeal to effect and answer all damages, costs and interests if it fail to make its plea good, then the above obligation to be void, else to remain in full force and virtue.

INLAND POWER & LIGHT COMPANY, Principal
[Seal] By HENRY S. GRAY
President
Attest: J. G. HAWKINS
Secretary

NEW YORK CASUALTY COMPANY, Surety
[Seal] By A. E. KRULL
Resident Vice President
Attest: J. A. VESTAL
Resident Assistant Secretary

The foregoing bond is hereby approved this the 20th day of Jan., A. D. 1936.

EDWARD E. CUSHMAN
District Judge [33]

[Verifications.]

[Endorsed]: Filed Jan. 20, 1936. [35]

[Title of Court and Cause.]

STIPULATION FOR ORDER EXTENDING TERM.

It is hereby stipulated and agreed by and between the parties to the above entitled action, by their attorneys of record therein, that an order may be made and entered herein by the above entitled court, or by the Judge thereof, without notice, extending the present term of the above entitled court to and including Monday, the 5th day of March, 1936, for the purpose of permitting and allowing defendant to make any and all changes in, amendments of or additions to the bill of exceptions served herein on January 16, 1936, and thereafter lodged with the Clerk of the above entitled court, which may be ordered or required by the Judge of said court; and for the further purpose of enabling the Clerk of said court to prepare, certify, and lodge with the Clerk of the United States Circuit Court of Appeals for the Ninth Judicial Circuit a transcript of the record in said cause, and for the performance of any and all matters incidental to the appeal of said cause to said Circuit Court of Appeals.

Dated this 24th day of January, 1936.

BEN ANDERSON
Of Attorneys for Plaintiffs
HENRY S. GRAY
Of Attorneys for Defendant

[Endorsed]: Filed Jan. 27, 1936. [36]

[Title of Court and Cause.]

STIPULATION FOR TRANSMISSION OF ORIGINAL EXHIBITS.

IT IS HEREBY STIPULATED between the parties hereto, through their respective undersigned attorneys of record, that all of the original exhibits herein, consisting of plaintiff's Exhibits numbers 1 to 10, inclusive, and 13 to 19, inclusive, and defendant's Exhibits numbers A-1 and A-2, shall be transmitted to the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.

Dated this 29th day of January, 1936.

Signed BEN ANDERSON
Attorney for Plaintiffs
ELLIS & EVANS
HENRY S. GRAY
Attorneys for Defendant.

[Endorsed]: Filed Feb. 1, 1936. [37]

[Title of Court and Cause.]

ORDER FOR TRANSMISSION OF ORIGINAL EXHIBITS.

Upon defendant's motion the Court being advised IT IS HEREBY ORDERED that all the original exhibits mentioned in the stipulation, this day filed to-wit: Plaintiff's Exhibits numbers 1 to 10, inclusive, and 13 to 19, inclusive, and Defendant's Exhibits numbers A-1 and A-2, shall be forwarded

by the Clerk of this Court to the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.

Dated at Tacoma, Washington, this 1st day of February, 1936.

EDWARD E. CUSHMAN
United States District Judge.

Unsigned copy hereof received and form approved, January 29, 1936.

BEN ANDERSON
Attorney for Plaintiffs.

[Endorsed]: Filed Feb. 1, 1936. [38]

[Title of Court and Cause.]

MOTION FOR EXTENSION OF TERM.

Comes now the defendant and moves the Court to retain jurisdiction over this cause beyond the expiration of the present term (July term, 1935) for the purpose of settling a bill of exceptions herein and for any and all other purposes in connection with the appeal to the Circuit Court of Appeals for the Ninth Circuit which has heretofore been allowed this defendant, and to that end to extend the present term of this court as to this cause throughout the next succeeding term of court, or until a day certain as may be fixed by the court.

This motion is based upon the records and files in this cause.

ELLIS & EVANS
HENRY S. GRAY
Attorneys for Defendant.

[Endorsed]: Filed Feb. 4, 1936. [39]

[Title of Court and Cause.]

ORDER EXTENDING TERM.

The defendant's proposed bill of exceptions having been heretofore presented to this court for certification and being now under consideration by the court, and the defendant having moved the court to retain jurisdiction of this cause beyond the expiration of the present term, to-wit, the July term of 1935.

IT IS ORDERED that this Court will retain jurisdiction over this cause beyond the expiration of the present term of this court for all purposes and particularly for the purpose of settling a bill of exceptions herein, and that the present term of this court is as to this cause extended for thirty days from this date.

Done in Open Court this 4th day of February, 1936.

EDWARD E. CUSHMAN
Judge of the District Court.

[Endorsed]: Filed Feb. 4, 1936. [40]

[Title of Court and Cause.]

WAIVER OF OBJECTIONS AND CONSENT TO SETTLEMENT OF BILL OF EXCEPTIONS.

Come now the plaintiffs by the undersigned, one of their attorneys of record herein, and waive any and all objections or amendments to the bill of exceptions as prepared and proposed by the defendant, which bill of exceptions was served on plaintiffs' attorneys on January 16, 1936 and lodged with the Clerk of the above entitled court on January 18, 1936, and consent that said bill of exceptions, in the form proposed or as hereafter modified or amended by order of the Judge of said court, may be settled, allowed and certified by said Judge, without notice, and that the original exhibits be not inserted in or attached to said bill of exceptions, it having been heretofore stipulated that the originals of all the exhibits should be transmitted to the Circuit Court of Appeals for the Ninth Circuit, and that the bill of exceptions when certified may be filed with the Clerk of the above entitled court, plaintiffs hereby expressly waiving any and all notice of the time of settlement of said bill of exceptions.

It is intended that this waiver and consent shall supersede the waiver and consent heretofore executed under date of January 24, 1936 and filed with the Clerk of the above entitled Court on January 27, 1936.

Dated this 6th day of February, 1936.

WM. P. LORD
BEN ANDERSON
Attorneys for Plaintiffs.

[Endorsed]: Filed Feb. 8, 1936. [41]

[Title of Court and Cause.]

BILL OF EXCEPTIONS.

BE IT REMEMBERED, that on the 1st day of October, 1935, at 10 o'clock A. M., the above entitled cause came on for trial before Honorable E. E. Cushman, District Judge; William P. Lord and Ben Anderson, of Portland, Oregon, appearing as attorneys for the plaintiffs, and Robert E. Evans of the firm of Ellis & Evans, of Tacoma, Washington, and Henry S. Gray of Portland, Oregon, appearing for the defendant; and the jury to try the issues having been duly empaneled:

Whereupon the following proceedings were had:

MR. SCHMIDT,

called as a witness for the plaintiffs, being first duly sworn, testified as follows:

(Direct Examination by Mr. Lord)

I am an employee of the defendant, Inland Power & Light Company, and have been employed since October, 1931. I am Mr. Shore's assistant and take care of maintenance on the project. I reside right

(Testimony of Mr. Schmidt.)

in the village at Ariel, in one of the houses there, and about 600 or 700 feet from the dam. I was there during the month of December, 1933, and had been employed there for two years before. I was there during construction of the dam. I couldn't tell you just the month the dam was completed but it was completed in 1931. Power was started to be generated in 1931.

On the night of December 19, 1933, I was working for the company. I could not tell you just where I was; I was in and about the damsite and had been there during the entire month. The company maintains a water gauge showing the height of the water of the lake. I have charge of that work partially. [42]

> "Q. And do you remember independent of any notations the height of the water at the damsite during the month of—up until the—at the first of the month?
>
> A. No, sir. We have log books that takes care of that. We don't try to remember it."

I do not know of my own knowledge the height of the water at the dam at the first of December. I do not know what it was on the 20th of December, 1933. I do not know how near the top it was at that date. I know the height of the dam. It is elevation 240 above the bed of the stream; that means feet.

I was subpoenaed to produce a blueprint of the map (dam). I don't have access to any of those

(Testimony of Mr. Schmidt.)

things you asked me to produce, but they will be here, I think. I have told the company about them and I think they will be here. Mr. Shore has charge of such documents. Mr. Griswald is the consulting engineer, I think with the company.

With respect to keeping a memorandum of the height of the water in the dam, that is not done by me or under my direction. They tell me when to open the gates of the dam from the power house. I have no charge of that at all. We maintain a log. The operator in charge of the shift makes the entries in that log. I am not one of those operators. As to my subpoena to produce the log, I have told Mr. Shore to produce them and he is going to produce them. Mr. Shore is here in the court room at the present time.

As to my knowledge of the depth of the waters impounded by the dam, I know the height of the dam. I don't know just the lay of the lands back of the dam. I do not know what the average depth of the dam is. The greatest depth of the dam is over 200 feet. I do not know offhand how long the dam is. I was about the dam on the 20th of December, 1933. The dam has five gates. They are located right side by side. In addition to the five gates there is [43] no other means of water escaping. There is an intake to the machine. I think it is 15 feet in diameter. The machine I think was running on the 20th day of December, 1933. The intake is 15 feet in diameter and is located at the

(Testimony of Mr. Schmidt.)

bottom of the dam, on elevation 60 to the center of it. As to whether it takes the full 15 feet of water when it is opened, that is according to the amount of the load we carry. That water can be controlled. I do not know whether the full capacity was on December 20, 1933. If the log books were here we could refresh my memory on that point. As to whether I saw the log books kept, I know they are kept. None of the information that went into the log books was furnished by me.

The height of the water in the dam is recorded automatically at the power house. I take care of the chart on the top of the dam but I turn it in every week. That is the only chart I have. As to whether that is done by machinery, the one on the dam is done by float. Well, if you call that machinery. Then it records it in the power house electrically. I think Mr. Shore has got those books here.

As to whether I transferred to the officers and agents of the Inland Power & Light Company any readings from this mechanism that has been referred to as a record of the height of the water in the dam, yes, I did.

> "Q. Mr. Schmidt, do you recall of your own knowledge, independent of any notations that you may have made in the log book, or any dates that you may have taken down for future reference, whether or not prior to December 21st, 1933—in and about—say the 15th of Decem-

(Testimony of Mr. Schmidt.)

ber, 1933, to the 21st of December, 1933, whether any—whether the water in the dam was so high that it went over the top of the dam."

"A. No, I never seen it go over the top of the dam."

I do not know how near the top of the dam I saw the water during [44] that period of time. As to whether I observed with my own eyes the height of the water in the dam between the 15th of December, 1933 and the 21st of December, 1933, I have seen water, certainly. I do not know how near the top of the dam it was, starting on the first date named. I do not know how near it was to the top of the dam on the 15th day of December, or any succeeding day until the 21st day of December. The power house or the power machinery was in operation on the 20th of December, 1933. I do not know whether it was in operation the 21st; I won't answer that; I don't know.

I knew about everything electrical by way of maintenance of the plant at the Ariel dam. I am familiar with the flood gates. I do not know what the condition of the flood gates was, what position they were in on the 15th day of December, 1933. I know they were open during the 15th of December and the 21st of December, 1933, but I don't know how far they were open. I opened them as I am ordered to open them from the power house. I don't know just the time or the height. I opened

(Testimony of Mr. Schmidt.)

them different every time they asked me to so I couldn't remember that. I am not able to say the amount that I did open them, how much escapement of water was per minute, not at intervals; I don't know. I know whether or not the gates were fully opened on the 21st day of December, 1933; they were opened fully, yes. The last opening, when they were fully opened, was about midnight. I couldn't tell you how long they remained open because I didn't have nothing to do with it after that time. I wasn't there, so I couldn't tell you of my own knowledge how long they remained open.

I was in the power house, working. I started to work in the power house the next morning, after the gates were opened. The water was still coming through the gates; the power was off. The power went off right after I opened the gates all the way; I don't know how long it remained off. I don't remember whether it remained off one day or not; I don't know. I don't know just when the power came on; I wouldn't say because I don't know. As to whether it was more than one day, I wouldn't say because I don't know, I tell you. It might have been one day. I mean to say that I can't remember. I [45] can't remember whether it was off the period of one day, twenty-four hours, or not. The flood gates are opened and closed electrically. The electricity is secured from the power house. I don't think there is any other hook-up with electricity by any other company outside of the In-

(Testimony of Mr. Schmidt.)

land Power & Light Company; there might be. I don't know whether it is connected up with the Portland Power Company.

Thereupon, Mr. Martin, a juror, inquired whether the witness answered the last question "yes" or "no"; and the witness answered, "I didn't know."

Five of the flood gates were open. There is no spillway there in addition to the five flood gates. The spillway is the only chute at the right side of the dam structure that I know of. That is where the water goes to from the flood gates. There is a way of opening and closing that. The five gates will push the water down that spillway. As to what the height of the water in the dam was at the time I opened the gates, I do not know. The water was approximately within three feet of the top of the dam. I said approximately three feet; I didn't say accurately. That was about midnight.

The location of the power house with reference to the spillway, is on the opposite side of the river. The spillway, the chute of the spillway, turns the water downstream. It turns it downstream from the dam to the west. The water then goes down the Lewis River. The spillway is not in a direct line with the power house. It is a couple of hundred feet off, I should judge. As to my knowing the course of the Lewis River after it leaves the dam, it flows through Woodland, I know that. As to whether or not it leaves the river in a sort of a

(Testimony of Mr. Schmidt.)

gorge, well, I don't know. Right below the spillway there is no gorge. I don't know how far below the spillway the gorge is; I never went down the river. I know where the bed of the Lewis River is as the water leaves the spillway in the power house; yes, I know where it is. As to what sort of banks there are on the Lewis River at that point, say 150 feet to 200 feet down, they are rock and dirt, I guess. On [46] the Cowlitz side I should judge they are around 40 feet high, and on the Clark County side higher; I don't know just how high. As to whether I would estimate it as being 40 feet, I would think so, 30 or 40 feet; yes, I would say 40 foot. It is not the fact that it is nearer 200 feet, on the Cowlitz side. When I speak of the Cowlitz side, I mean Cowlitz County. As to whether that is the west side of the river,—it is on the north side, isn't it? The river flows east and west, so the banks has got to be on the north and south. The river is a couple of hundred feet wide below the spillway. It is not narrow at all right below the spillway. I don't know where it does narrow at. I never been down the river; I am no fisherman.

As to when I started to work at the power house, so that I didn't know how long the gates remained open—well, I think I went to work at 8 o'clock the next morning after the flood; I generally go to work at eight. As to what work I did,—I did all the work that needed to be done. The work that had to be done was cleaning and fixing up the

(Testimony of Mr. Schmidt.)

equipment. The power was not running then. I don't know just how long I worked there. I worked until we got the machines started again; I don't know when that happened. I worked all that day. I recall that eventually the machinery of the power house was started up. We made a new connection instead of using the power generated by the Ariel dam. That was the company's power, but we got it from our power lines up in the switch yard; they were our own lines in the switch yards. That power was generated from another plant; I don't know what plant it was generated from. They were tied in together; I couldn't tell you just which plant we got it from; I do not know which power house it came from. We do not have any other plants on the Lewis River. The nearest plant to this plant is Portland, I think. As to whether we got this power then from Portland, I don't know; they are all tied in together; you get it from all over.

"Q. Now, until this new power was secured, there was no way of closing those gates, was there? [47]

A. Yes, sir.

Q. How was there?

A. By hand.

Q. Was that done?

A. It could have been done, I wasn't there after twelve o'clock at night."

I wasn't there after 12 o'clock of the night of the flood. As to whether they had been closed up

(Testimony of Mr. Schmidt.)
until twelve o'clock Monday—they could have been closed by power up until that time when I left. As to whether these gates were closed by power or by hand, you can close them either way. As to how they were closed, well, I closed them by power, previous to 12 o'clock that night, at intervals. I opened them wide open at around midnight; I wouldn't say just the time. The next time they were closed, I don't know whether they were closed by hand or by power.

On Cross-Examination by Mr. Evans,
of attorneys for defendant, the witness Schmidt testified as follows:

I should judge the high water began to come in the Lewis River there four or five days before the 21st of December. I had had occasion then to operate these gates. The gates are the only outlet except the water which comes down through the penstock. If I close the gates, then the water flowing into the lake raises the level of the lake. We use these gates to control that level. I could not say just how long before the evening of this Thursday, December 21st, I started opening the gates,—five or six days, perhaps. The company has the record of the exact opening. It is all on record, when I was told to open them.

If the water kept coming up I would open another gate. That would run along for some little time, and then I would open another gate. They

(Testimony of Mr. Schmidt.)

were not all opened just at once. They were opened gradually, as the water increased and the rain, and the flood increased. The last gate was the large one. That had been opened for some hours, all but about six feet, something [48] like that. Finally, when the storm kept raising, at midnight I opened it wide. The company has records of all those gate operations. Those records all show what gate was opened. The records will show which gates were opened, when opened and how far.

On Redirect Examination by Mr. Lord, one of the plaintiff's attorneys, the witness Schmidt testified further as follows:

I did not myself keep those records. I did not see those entries made myself; I was up on the dam when they were making them; maybe in the power house.

> "Q. So, when you say the records would show when the gates are opened and when they are closed, you are only saying that in the usual course of business those notations would be made?
>
> A. No, I read the log book every morning, and I know the records are made, and I know it was made, but I don't keep track of the minutes in the opening."

I am not able to say now when the gates were opened prior to the first of December. I could not tell you the extent. I am not able to say the height of the water during that period.

JACK WILSON,

called as a witness for the plaintiffs, bein first duly sworn, testified as follows:

Direct Examination by Mr. Lord.

My name is Jack Wilson. I live five miles above the dam on the Cowlitz side. I live approximately about three-quarters of a mile, straight line, from what is known as Lake Merwin. I was living there in the year 1933. I was not employed that year; nothing at all in the way of employment. As to whether I had no occasion to go up and down the highway; I was just scouting around trying to find a job if there was any. I follow the work of timber falling. I was scouting around to find a job in December, 1933. There is no highways leading along the bank of the Lewis River between my house, my [49] home, and the dam. The road is north of us, probably about 700 feet. It is possible to see the lake from some parts of the highway. It is possible to see the dam from the highway, but you cannot tell just the exact distance, how full or how low. You are too far off. From the distance I live from the lake you cannot see it well enough to know whether the water is high or whether it is low.

I did not at any time see the height of the water in the lake so I would know whether the lake was full or partially full during the month of October, 1933. I was not down at the lake at any time in November, 1933. During the month of November

(Testimony of Jack Wilson.)

I did not notice the state of the water with reference to the top of the dam. I do not know the state of the water as to its height during the month of December at any time prior to the night of the 21st day of December, 1933.

I recall talking to you on Monday last week; talking to you and Mr. Grieger.

"Q. Do you recall telling us that in the afternoon of that day, what day was it you was there, Thursday, wasn't it?

A. Somewhere about there.

Q. Or Friday and you remember telling us that you were up and down the road, running along the side of the Lake time and again, and you noticed that that Lake was clear full pretty near to the top?"

"A. On the next day I went to LaCenter, and stayed there until the next evening, and was over town when the water came up."

I don't know the date of it but it was on Wednesday. As to whether I observed it on that day, on the 20th, I don't know whether it is the 20th, it was right there close somewhere. As to whether in fact I told you on that day that I noticed the water high,—it was pretty near to the top of the gates, [50] but probably looked like three or four feet, only it was so far from the road you couldn't tell, to be exact.

The next day about noon I went down to La Center, but I went around the head of the lake. I

(Testimony of Jack Wilson.)

went down the highway leading to Woodland, but around through the Clark County side. I was not able to see the condition of the water in the Lewis River below the dam. The closest I was was when I crossed the Yale Bridge at the head of the lake. In other words, I went up the Lewis River instead of going down, and crossed at Yale, about 10 or 11 miles from the dam. The dam floods up beyond Yale. There is about a 400 foot bridge there. As to the state of the water as I crossed over that bridge, you can't tell up there. It is way up there at the head of it; no current; it is dead water.

The bridge was quite high above the water; I don't know how high; about 60 or 70 feet, I imagine. The water underneath the bridge was muddy. It was not running. It is still water. I do not know how much further up the river the Lewis River extends beyond the bridge. The bridge is about 400 feet long. I had no difficulty in getting over the bridge. That was on Thursday, right after dinner; probably about one or one-thirty. I was over at Woodland Thursday night. I was over there the rest of the night from about five in the evening. I was up all night.

I was in a restaurant in the Town of Woodland from about five until a quarter of eight. It was raining. It had been raining several days. The Lewis River runs near the Town of Woodland. In the upper end it is probably twelve or fourteen hundred feet from the restaurant. There is one road leading

(Testimony of Jack Wilson.)

out of Woodland each way. There is one road goes up along the banks of the Lewis River, the other one goes south.

That one leads you across the river. I don't know the approximate height of the banks of the Lewis River at Woodland. I came into Woodland on the south road. That took me across the bridge, the Pacific Highway bridge. [51] That is the one that turns by the Samatta Auto Camp. I noticed the Lewis River as I crossed over it. I don't know exactly the height of the water at that time but it was getting rather high. When I got down there off the approach of the bridge,—I was not afoot; I was traveling in a car. I know where those restaurants are down there. I stopped at the first one on the north end of the bridge. That was Henry's.

I stopped there until a quarter to eight. I did not go to Flora's across the street. That is what I call Woodland. I was not down at the part of the town where the business section is, the banks, etc. There was water in the streets then in the lower part of town. That is the way you turn to the left off of the highway. I left Henry's place about a quarter to eight and started north on the highway. When I say north I mean going toward Tacoma. As to how far I drove, oh, I probably got up the road probably about 3000 feet. That took me to Macky's. The road gradually turns from the river there. As to the condition of the highway then, it was kind of wet when I got there.

(Testimony of Jack Wilson.)

The banks of the Lewis River were overflowing then. I stalled the car and I got out, and another fellow and I pushed it to high ground and got it started and took it on down the highway and left it. I did not go back. I went up to a farmhouse and stayed there that night. I went probably a quarter of a mile from town. I went to Connor's farm house. With reference to the Lewis River, Connors live up on the hill on the lefthand side of the highway coming north. I didn't observe any rise of the water after 8:15. It was dark, and I went up to that place and stayed all night. I observed it the next morning. From this farm house you could see that most of the town was covered with water. We was up on a kind of a knoll, and you could see over it. When I am speaking of the town I am referring down there at the county bridge, the highway bridge. I am referring to the lower town where the bank is and the hotel, etc.; all over; down as far as the railroad grade. I did not look up the river at a great distance. [52] I couldn't see very far. As to what time I got up in the morning, I didn't go to bed. No, I never did watch the water rise. I imagine it was probably around 11 o'clock when I got to that house.

As to whether I noticed at that time anything around that called my attention or fixes it in my mind where the water was when I last saw it,—well, I noticed it pouring over the road quite fast, filling in the flats. I couldn't see from where I was

(Testimony of Jack Wilson.)

how high the water was over the road. I started to run my car through it that night, but not the next morning. I imagine the water was high enough to get in the motor of a car. I couldn't tell from where I stalled my car how high the water was the next morning. It was down the highway around the bend, and couldn't see it there. I saw a place that night that fixed in my mind the height of the water, and I saw the same place the next morning. There was a raise in the water. As to how much it had raised, well, from where I was it went up against the railroad grade and couldn't go any farther. It just filled up the flats. That is how it happened to back up on the highway. I would say it raised three feet from 11:15 until the next morning when I got up and saw it. The land in that district is practically level, but the water filled in.

Cross Examination by Mr. Evans

On cross-examination by Mr. Evans, of attorneys for defendant, the witness, Jack Wilson, testified as follows:

When I got to Woodland at 5 o'clock in the afternoon the lower part of the town was then flooded, where the dyke had busted. I know where the Pacific Highway is. That went out the next morning. I don't know of anything that went out on Thursday, but the town was pretty generally flooded on Thursday night. As near as I can remember the town of Woodland was pretty thoroughly flooded about five minutes to eight on Thursday night.

(Testimony of Jack Wilson.)

I went with my car up the Pacific Highway towards Tacoma and stopped just a short distance out of town. I was going up there to see a friend of [53] mine. I did not go through the business part of Woodland with my car. I came in on the highway. The highway doesn't run through there, just the upper end.

Now, up at Yale, that bridge there is across what they call Lake Merwin; that is part of the reservoir from this plant.

CARL E. INSULL,

called as a witness for the plaintiffs, being first duly sworn, testified as follows:

Direct Examination by Mr. Lord

I live at Woodland; my occupation is dairyman. I own a dairy, which is located along the Lewis River bank. I have about 47½ acres. I have lived there since 1922. During that time I have observed the Lewis River. I have lived in the Northwest 29 years, and am familiar with the stream conditions during the entire year. I have been familiar with the so-called Ariel dam since it was built. I knew the river before it was built. I know something about freshets that might occur in the river, as to how great they were. As to whether there were many freshets in the river, there was one freshet in the Lewis River in 1917. During the period that I lived there I saw freshets before 1933. Since I moved

(Testimony of Carl E. Insull.)

there, there was one just about Thanksgiving eve. I don't remember exactly if it was 1925 or 1926, I don't remember just exactly, but I know it was Thanksgiving eve of those years.

As to my knowledge of the height of the water in that freshet in 1926, or Thanksgiving time, with respect to filling up the channel and such matters, and as to how high the water went,—it went over the Ariel highway about 400 feet to my house and north and filled my place something around 37 or 38 acres. It went over the top of my land.

I know the land owned by Mr. and Mrs. Grieger; I know their farm well. I did not see the height of the water up there in 1926 along their property. [54]

I was right on my farm with my family and eight children. I have lived there all the time since I moved on that property. I recall the condition of the weather in 1933, and up until the 21st of December, 1933. It rained very heavy; the rain during that period was much greater than usual. As to what period of time it was the greatest or heaviest, I would say Sunday the 17th of December, 1933, and Monday and Tuesday and a Wednesday it rained very heavy.

Tuesday was the 19th of December; I recall the condition of the weather on that day. I live mostly on the Lewis River banks, and I watered my cattle in the river. On Sunday, December 17th, I watered my cattle in the forenoon, but in the afternoon and

(Testimony of Carl E. Insull.)

after that and Monday I can't water it in the river; the river is very low at that time. I watered my cattle usually in the river. I keep my cattle in the barn which is located on the north side of the north bank of the river. My barn is separated from the river by the highway. My barn is about a thousand feet north of the river bank, highway between the river and the barn, and you see my house about 800 feet or so off up the river, is along the highway, about 50 or 60 feet off the highway north.

I know Mr. Grieger's property. I have been on it. Mr. Grieger's land is along the south bank of the Lewis River but on the Clark County side, something about 3½ or 4 miles up the stream, above my place. As to whether there are any streams on either the north or south side, between my place and Grieger's place, that run into the Lewis River, I haven't seen that. As to the height of the water on Sunday, the 17th, between the upper end of Grieger's place and my place, the river is quite high up, but after noon it went down, the river went down almost below the normal. Mr. Grieger's property is below the dam, and my property is below the dam.

I observed the condition of the water on the 18th, Monday. I watered my cattle over at the river. It is low enough to drive to the river. I watered [55] my cattle right on the main stream off of Lewis River. It is a channel, you know, where I watered my cattle. The river was inside of the channel

(Testimony of Carl E. Insull.)

then. During the night of the 18th it started to rain a little towards evening, after I watered my cattle. On the morning of the 19th it is still the same condition. It started to raise a little toward evening. During the daytime of the 19th the water in the river was not all over the banks, but just in some places, in the lower part of the side channels.

I know the highway going up the north side of the Lewis River. That highway follows up the river almost close to the bank. Of course some places it is a little off, but almost close to the banks. I did not go up the river on the 19th, and on the 20th I couldn't; the water is high. In the morning on the 20th I went to the town of Woodland, and the river was very close to the highway. I stayed there till evening; at four o'clock I came back. It is more higher, very close to the pavement in some places, the main Pacific Highway, and my house, so then I brought up a stick to the front of my house to check if it raised or stand still. I put the stick out in the evening about 5 o'clock.

I observed the condition of the rise and fall of the water, and observed it was raising. As to how much of a stick I put out,—I put out a cedar stick a couple of inches round, and I drived it in, just outside of the edge of my fence, over toward the river, about a foot or so. The stick was about three feet long. I continued to watch that stick, and continued to watch the rise or the fall of the water. The water was raising till I went to bed. I did not take it very seriously. It was raising kind of slow,

(Testimony of Carl E. Insull.)

so my wife is very nervous. She start up when I asleep, and see that stick,—that is the night of 20th that I am talking about. On the night of the 20th I observed the current is very strong.

I stayed in bed all night until 4 o'clock in the morning. At 4 o'clock in the morning I am drowned by the water. I could not get out of [56] the house any more; at 4 o'clock Thursday morning.

I did not go up to the dam between the 19th and the 20th; I couldn't go any more. I had been up to the dam during the month of December; about the 10th. As to whether I observed the height of the water in the dam at that time,—I stopped the car, I did not go into it. I stopped the car on the highway, and I see the lake is full.

I have had experience with power plants, and artificial ponds, and reservoirs and such like, since I am 16 years old until 1914. I observed the condition of the lake at that time.

The surplus water was let out of the Ariel dam by the spillway. I had been there before that, you know, a good many times. The lake was almost full at that time, the 10th of December. It was about a couple or three feet from the top. At that time one of the gates or spillways was a little bit open, at the north side of the dam. The other gates are locked or shut up.

I slept all night during the night of the 20th till 4 o'clock in the morning on the 21st. Then I observed the river, the water was around my house;

(Testimony of Carl E. Insull.)

I couldn't get out any more. My measuring stick was out in the water; I could not see it. The water was over the top of the stick and over the fence. I could not see it—I could not see anything, except a terrible stream, and the foam, and the driftwood. The water is traveling so terrible, you know. I cannot tell just how fast.

I observed the current in the river on the night of the 20th, at 5 o'clock on the evening of the 20th, when I brought that stick up. I noticed it again in the morning on the 21st, when daylight came on, and it is a terrible foam, and the current, and when little daylight came out you can see current is so swift, nobody could stand in it. Comparing the two currents from the nighttime at 5 o'clock, and in the morning when the light came on, it is swifter in the morning. In the evening, December 21st, it is higher, more [57] higher. Between 12 and 1 o'clock in the morning on the 21st it stands still, is the highest point. I am now speaking of Friday morning, the 22nd. As to what time it was the highest on Friday, the 22nd of December—to 12 and 1 in the morning, midnight. Off that point it starts a little slowing down.

It started to go down the 22nd of December. It was the highest at 1 o'clock in the morning on the 22nd of December.

I know Mrs. Grieger's property. I know and am familiar with other farm lands of a like type around

(Testimony of Carl E. Insull.)

in the valley thereabouts. The lands there are used mostly for agricultural purposes, particularly dairying.

I know about the type of land that is adjacent to the Lewis River. It is land of different types and different kinds. Sandy loam and silty loam, and heavy and black clay, and it partly is light sand, sandy, but light sandy land is not very much, but mostly the sandy loam and silt, is the most of the land. As to the width of the Lewis River valley and where it starts out to have low lands,—it starts out about five miles below the Ariel dam, there is kind of a narrow funnel shape and then it starts out to spread out and spread out before it gets to the Columbia banks; then it is very wide, which contains something around 8,000 acres of level land. Mr. Grieger's land was composed of a kind of silty loam.

I know the reasonable value of the type of land owned by Mr. and Mrs. Grieger in the month of December, 1933. I know the type of buildings that were on Mr. Grieger's place. I do not know the approximate cost of the construction of such buildings, or the reasonable value of such buildings, in December, 1933.

I know the general type of dwelling house or houses or barns, and outhouses, that was on this property in December, 1933. I did not know exactly [58] the farm as a whole, that is the different portions of the farm, what was cleared, what was pastured, etc., before the flood. I know the value of the

(Testimony of Carl E. Insull.)
entire property of the farm prior to the flood of 1933, to some extent.

(Upon Cross-Examination by Mr. Evans, as to his qualifications, the witness, Carl E. Insull, testified as follows:)

I am in the dairy business; I have been in the dairy business since 1914, before that I was an engineer, steam engineering. As to whether I have bought and sold any land in that vicinity in the last 10 years, oh yes, I have bought lots of land and sold lots of land. I bought land in the month of June, 1911.

I bought land in 1919 and 1922; the last I bought at 1925. I have not made any sale since 1925, no, except a little piece it didn't amount to anything. That was sold, just a little lot over (off) my property. I do not know of any sales within a year before or after December 21st, 1933.

Thereupon the Witness Carl E. Insull,

Upon Further Examination by Mr. Lord, testified as follows:)

As to whether I had any interest in any dairy or with the dairy industry around southwestern Washington,—I was the manager of the Cowlitz and Clark Dairy Association about six years ago. The membership of the Clark Dairy Association was over two hundred. The members of that association were farmers; they owned dairy land. I discussed with them the values of their property. I was the chair-

(Testimony of Carl E. Insull.)

man of that dairy association for two and one-half years. I think it was 1926 and 1927 and a half of 1928 that I was manager. I know of some sales of land being made around the valley there in recent years. Before 1929 the sales were made pretty often. I know most all of the farmers around there. As to whether any of those farms there have been sold since 1929,—they change hands, you know, quite often there, but I didn't just pay any attention in particular which was. [59]

As to my opinion on the reasonable market value of the Grieger place prior to the flood of 1933,—land of that type was worth at least some $250 to $300 an acre. I have seen the land since the flood. The place is almost washed away. The buildings is there on some high banks, the lands on that place were mostly low bottom land. The low bottom land is the same as all around, in Woodland; the same kind of land. There was silty land on this place; it is silty loam. The silty loam is all washed away. As to whether there is any soil left there, there is nothing left but the river there now, it is water almost.

I recognize what is depicted in the pictures, photographs, you hand me.

"Mr. EVANS: Mr. Lord, I will admit those pictures were taken on Mr. Grieger's land."

(Thereupon the photographs referred to and marked plaintiffs' exhibits numbered 1 to 7, being seven photographs of the plaintiffs' land, were re-

(Testimony of Carl E. Insull.)

ceived in eveidence and marked "Plaintiffs' Exhibits numbered 1 to 7.)

Those photographs correctly describe the land that has been affected by the water. I do not recall whether the rocks and boulders which I see there were there before.

I know the reasonable market value of the Grieger place after the flood.

(Thereupon Mr. Evans, of attorneys for defendant, cross-examined the witness, Mr. Insull, as to his qualifications, and the witness Insull testified as follows:)

I was on the Grieger place two or three times after the flood. I been there right after the flood first time, to look over the land. I didn't ask him how many acres he had; I did not know how many acres there was on the place. As to how many acres there around the place now, house and barn,—just a little corner left. I don't know how many acres are around the house and barn now, left untouched.

[60]

As to the reasonable market value of this place, there is no value of any kind of land today, not my place or anybody else's, no value after the flood. I cannot give it away, my place.

(Upon Cross-Examination by Mr. Evans, of attorneys for defendant, the witness, Carl E. Insull, testified as follows:)

(Testimony of Carl E. Insull.)

The soil on the Grieger land is just ordinary silt soil. As to whether the flood waters would have an effect on that,—it is washed away now.

In 1926 my place was flooded. My place lays at about the same elevation as the Grieger property. At that time the waters just covered my place, that is all.

In this 1933 flood I put a stick up on Wednesday night, the 19th. When I got up on the morning of the 20th, at about 4 o'clock, the water was away up over the stick. As to how many feet over the stick,—I could not see anything, no fences or nothing. The water generally over my place there was about 12 to 15 feet. I do not know whether at that time it was the same way over the Grieger place. I saw the Grieger place just about a couple of months before the flood. When I got up on the morning of the 21st, not the 20th, the current is so strong you know, just everything just flying, logs, and the trash; everything went,—hit to the hollows from each side where the current is coming. The current was highest the morning the 22nd, between 12 and 1 o'clock. That is 12 to 1 o'clock on the 22nd; that is for one hour. That is when the flood reached the peak. and that is when the current was the swiftest. After that it was stationary just a few hours; then the flood started slowly to come down. There was the same rush after 1 o'clock, but it just started to come down. It was settling then. As to whether, if there was any damage done it was done by the current, I

(Testimony of Carl E. Insull.)

don't know. At 1 o'clock it started to come down. That is true; when the river went out.

I have not any interest in this law suit, personally. Of course, I have a case of my own against the power company. I expect to bring suit [61] against the same power company for damages growing out of this same flood. I have already signed up a contract to that effect. That was signed right away after the flood. I signed up with my attorney. He is in Portland. His name is William Lord.

As to whether real estate values now at the present time are any higher than they were in 1933,—nobody don't buy land today at Woodland. I don't know about the general market. I don't know anything about the market generally. I have not kept myself advised on the market value for some time; I'm not interested now. I started to buy land in 1911. Since 1929 I didn't pay any attention. I didn't pretend to know the market value since then; only around through my neighbors; just my neighbors. My neighbor is just alongside of me. I sold land to him. I know what land is worth today around, but nobody don't want it any more. Nobody can sell the land below the dam any more.

GRADY PHILLIPS, called as a witness for plaintiffs, being first duly sworn, testified as follows:

(Direct Examination by Mr. Lord)

I reside at Hayes, about four miles above Woodland on the Lewis River. My property adjoins the

(Testimony of Grady Phillips.)

Lewis River. The house sets back about a quarter of a mile. I have lived there about six years. I was there personally part of the month of December, 1933; the latter part of the month. I follow the occupation of farming, I guess. I was farming this farm at this time. I was there around the 20th of the month. I know the condition of the weather that was occurring; it was raining pretty hard. I could not say exactly how long it has been raining; it has been raining for several days—perhaps 10 days. I don't know, maybe longer than that, I guess. I know the condition of the river on the 20th. I saw it personally. I noticed the river for about 10 days I should judge prior to the 20th, something like that.

Ten days prior to the 20th the condition of the river was up above [62] normal, I would say. It was not above the banks; well, maybe a few days before the 20th—no, I don't remember just when it did start over the bank; sometime I believe before the 20th, though. At the point I viewed the river, it was just slightly over the bank. At that time it was not cutting any land away that I noticed. Mr. Grieger's property adjoins my property on the west. I saw the river running along their place at that time. I saw it practically every day for eight or ten days, until the 21st. Up to the 20th there was not any cutting of the banks of the Lewis River along the Grieger property that was noticeable to me.

(Testimony of Grady Phillips.)

It seemed to me that the water had just started over the banks of the pasture land and the farm land of the Grieger property on the 20th. The river was the same after the 20th. I think it was raining a little more the 20th, or after the 20th—the 21st. I did not notice any noticeable change until the morning of the 22nd, was the first change that I noticed. It raised all right on the 21st. On the morning of the 22nd it was more like an ocean than it was like a river, then. The morning of the 22nd I would say was the first I noticed the river begin to cut. The Grieger property was just washing away. It had just simply cut everything—cut the whole place and washed away down—it looked to be down about eight or ten or twelve feet. It washed down to the gravel or bedrock. I would call the soil on that place a silty loam. I am not a land expert. The silty loam washed away. I could not say exactly how many acres of it were washed away. I should judge 50 or 60 acres probably.

I did notice whether or not any of the other lands below Mr. and Mrs. Grieger's property were cut into. I am acquainted down the river to Woodland is about all. I noticed the land just immediately below Woodland, so I am not very well acquainted with that, but my place to Woodland I am well acquainted with that. I am familiar with the adjoining land to Mr. and Mrs. Grieger's property on the Clark County side. The river passes by that property. Going on down to the next place, the situation

(Testimony of Grady Phillips.)

there is practically the same thing. I know that land. I am familiar with the next farm down, along the Lewis River. [63]

I am not familiar with the lands along on both sides of the Lewis River, before the flood, as to its contour and its condition. I am familiar on the Clark County side. I was familiar with it after the flood.

The series of ranches that start from my place down to the town of Woodland are all adjoining the river. I saw these farm lands between my place and Woodland after the flood.

Cross-Examination by Mr. Evans

As I recall, Thursday was the 21st. I was there the Sunday before. The water was up. There was a freshet, yes. I do not recall that the river was out of its banks very much any place. It was not over the bank on my property where I would observe it. I undoubtedly would have observed the Grieger place that day, Sunday. I do not know whether or not the Grieger place was flooded on the Sunday preceding.

I don't know how high the water was. I saw the river for seven or eight days before the 20th. It seemed to me that the river was over the bank on Wednesday. It would be a hard statement for me to say how much over the bank. I don't recall it being on my farm. It seemed as though it was over the

(Testimony of Grady Phillips.)

Grieger place; yes. I don't know how much of the Grieger place was covered that day. I don't know as a matter of fact whether it went across at all. It seemed to me as though there was water over the bank that day. It wouldn't be perhaps over the farm generally. At my place the banks are fairly high. At my place the banks are about ten feet or more.

I am fairly familiar with the Grieger place. The river comes in pretty straight. There was a jetty right at the back of my place. I do not believe that jetty was on Grieger's property; there might be part of it on his place. I was fairly familiar with the character of the land on the Grieger place. I recall that it was a silty soil; a silty loam, they call it. As to whether it was settlings washed in by the river largely, I couldn't say where [64] it come from. I imagine it was brought in from above. I don't know whether that soil was brought in by former floods and deposited. That is history to me; I don't know; I never had any understanding. I don't know when I first observed the flood condition of the Grieger land; probably the 15th, or prior to that perhaps. I was away from home and came home on account of the water. I don't recall just the date; probably a few days prior to the 15th.

The flood had not been troublesome on the Lewis River prior to the 8th. Other rivers were having some freshets. What brought me home was the slide. There had been an extremely heavy rainfall

(Testimony of Grady Phillips.)

for a considerable period of time, and all of the rivers in that vicinity were more or less on a rampage; they were freshets. I don't know whether the Cowlitz River was away out of its banks. I do not know about the Little Kalama River, just over the ridge from the Lewis. The Lewis River was practically the only river that I know anything about during the flood. It was a slide up near Mt. St. Helens, near the railroad tracks and the Weyerhaeuser Timber Company's land, that brought me home. The track was washed out and they couldn't operate it; the slides pushed it away.

As to whether I was over to the Grieger place after the 15th and before the 22nd, or Friday,—I imagine back and forth. I went to the Grieger place after I got back home until after Friday, the 22nd. I can't just recall the date, but I imagine I was down there every day. I can't say how many times I went to the Grieger place; I don't know. As to any specific time that I went on to the Grieger place before Friday the 22nd,—I went there the 21st. I was there on that day some time before noon. I couldn't remember the time. I didn't have any watch along and wasn't paying any attention to the time. I would say it was between 8 and 10 o'clock, to my best judgment.

I believe that the water was out of the banks of the Lewis River [65] at that time; I don't know. It has been so long ago I just don't remember the date. It was out, it was over the banks, I know, to

(Testimony of Grady Phillips.)

some extent. I believe it was flowing down through the swale on Grieger's place on the 20th where the wash occurred. The wash started practically right west of the jetty, I guess. Beginning at the jetty, the Grieger place was a little lower than my property, and I imagine it was a little bit lower than the surrounding property on Grieger's land.

Just from looking at it I couldn't tell, but after the water was up it showed that it must have been a little bit lower. The place where the wash occurred on the Grieger property was lower than the property on the back of his place. That must be where the water would strike first; that is where it went. I remember the condition of the Grieger place back of the jetty prior to this flood. As to whether it had been washed out there some considerable places back of the jetty prior to this flood,—well, that is characteristic of the rest of the bottom land. There is lower places and higher places, but it was washed, I couldn't say. As to whether there was a very perceptible old wash there back of the jetty,—well, I don't know how; I couldn't say whether it was a wash or what it was. As I say, it is characteristic of the whole country; something had gouged it out down there back of that jetty to a certain extent.

I don't know how late on Wednesday the 20th I was at the Grieger place. I probably spent an hour or so there. I was probably alone. My occasion for going was just looking at the river. Possibly a tenth of Grieger's place, beginning at the jetty, was under

(Testimony of Grady Phillips.)

water when I was there on the morning of the 20th. He has approximately one hundred acres, I understand. I would doubt if there were ten acres under the water at that time. Perhaps eight acres were under water. I have no way of knowing; maybe more or less, I don't know. It seemed to me as though the river was flowing through the swale at that time. The water was there, but not much of a current. As to whether this is an ox-bow that makes a big bend, a kind of [66] a double curve there in the river, well—there is a curve in the river, a slight curve, yes. The river went through and made the wash from the jetty; it just cut off the curve. I do not recall that it had done any cutting on the 20th. I did not look to see. I did not make any close examination for cuts.

I should guess I was there perhaps an hour. From there I went home. I did not observe the river all the afternoon of the 20th; I didn't make it a business to watch the river. It was not out of its banks at my place, I don't believe; it wasn't out of the bank at all. I couldn't say how much higher the ground in my place is than the Grieger place. After the water got up so I could notice it, I could notice it was high, that is all. It wasn't over very much of my place on the 20th. No doubt if it was on Grieger's it must have been on mine. I don't remember whether it was or not. I thought we were talking about Thursday, the 21st. On Thursday the

(Testimony of Grady Phillips.)

water conditions were practically the same as Wednesday. I would not say just the same, but I don't think there was any radical change in the river, as I recall it; nothing to compare with Friday. I was on the Grieger place on Thursday; that was in the morning, as I recall. As near as I remember I went alone. I thought it was Thursday, the day you were speaking of before.

I don't remember any radical change in the water on the Grieger place on Wednesday and Thursday. I was there Wednesday too; I was around the neighborhood there. I don't think I was on the Grieger property Thursday afternoon. That Thursday afternoon I was doing a lot of farm work around the place. My farm may have been under water at that time. Whenever it gets over the Grieger property it gets on a small portion of mine. I don't recall whether there was any more water flowing across my place Thursday afternoon and Thursday evening than there was on Wednesday, particularly. On Thursday night I remained up until perhaps nine o'clock; I don't remember. I don't know what happened in the night then at all. Some of my land was washed away. I have a claim against the Inland Power & Light Company. I [67] am suing them too, through Mr. Lord.

DAVID J. SHORE,

called as a witness for the plaintiffs, being first duly sworn, testified as follows:

Direct Examination by Mr. Lord.

My name is David J. Shore. I reside at Ariel dam. I have lived there since before the plant started, five years next February. I am superintendent of the Ariel dam. I have been superintendent for the past five years. A blue print of the plans for the dam are here in the court room; the engineers have them.

As to whether we keep a record of the height of the water in the dam,—we keep an hourly record of the water. That record is kept both by us and by the Geological Survey. The record for the government is independent. I have charge of it. Mr. Schmidt takes that record off and passes it on to me at my desk, and I mail it on to the office and they in turn to the government. Mr. Schmidt was the witness who testified here yesterday. Those records are transmitted to the government, I think in this building, Tacoma. I don't know whether they are in the possession of Mr. Calkins. As to whether that is the man to whom we transmit them, as I said, the transmittal is not directly through me. I have daily log sheets that I send to the office, and I pin this government report on that, and send it to the office, and then transmit it to Tacoma. I do not transmit the record to any particular employee. As to whether I know Mr. Calkins,—I may have met him; there are several government men coming

(Testimony of David J. Shore.)

to us about readings of the weather bureau and water readings. I don't know how long he has been in the office here. I do not know whether he was here during the year 1933. As to whether I kept a record of it for my company during the rainy season of 1933 of the times the flood gates were opened, it is in my log book as far as my record is concerned, the reading of the opening of the flood gates, and the pond, is transmitted with our hourly readings, on the switchboard to the company every hour. As to whether our log book contains the same readings every hour, if we change [68] a spill the log book is changed. The spill is transmitted to the office until the change. The spill is not always open. The spill is according to the stream flow.

As to describing the spillway, or how it acts,—we have five gates; we have a small gate 30 x 10, which is our control gate that can be operated from the power house. The reason of the spill, a machine takes so much water; that is, according to the load of the machine; but when the machine is fully loaded it takes a certain amount of second feet, approximately 3,000 some second feet. Whenever the water continues rising and the machine cannot take it and we have to start in on the spill, we start in with the little gate. When it gets beyond the little gate, the operators report that the little gate is fully open. Then we have to go to the dam, and there is a push button motor on No. 2 gate,—that is the large gate, that is 30 x 39. We open that according to the operator's instructions to hold this water

(Testimony of David J. Shore.)

in the pond at a certain elevation. As that stream flow increases, that operation increases. Then we will gradually open up this second gate. If the stream flow is too much for the second gate, the same is repeated on the third gate. We start opening that slowly as the stream flow continues, and so on up until they are all open. That is the operation of the spillway.

Exhibit 8 for identification shows the dam and the gates very clearly, but does not show the gorge of the Lewis River downstream from the gates so it could be described from this picture.

(Thereupon Exhibit 8 for identification, a photograph of the dam, was admitted in evidence and marked Exhibit 8.)

I know the height of the dam. It is elevation 240. The water can be impounded to elevation 240 before it goes over the top of the dam. There is no other spillway than these five gates represented in this picture. (Exhibit 8) [69]

I know the dimensions of those spillways. Assuming that the water is at a level of 237 in the pond, the big ones will spill about 30,000 second feet apiece, and the little one will spill close to 7,000. The big ones are all the same size; all but the little one, No. 1.

The amount of water taken into the machine is according to the load. By load I mean the kilowatts on the machine. If it is pulling 20,000 kilowatts it will take less water than if it is pulling 45,000 kilo-

(Testimony of David J. Shore.)

watts. The maximum it will take is about 130,000 (3,000) at full load. The minimum can go to zero. It can be shut off, with the machine running practically shut off.

The height of the water in the lakes does not have anything to do with the efficiency of the operation. It is the same as a pressure on a boiler. If you decrease the head, you decrease the pressure on the machine, and consequently it cannot pull as much load.

The intake was not cut out on the 20th. I cannot remember the amount that was going through the intake on that day. That load varies throughout the day.

I have a means of knowing what the intake was letting through on the 20th. We can get the records to show what it was pulling all day. (Witness taking his log book) This log book is our own,—done in the power house. We keep it ourselves, the original information being in the log. That is kept manually. This is a description of the record as went on by each man, his performance during the day. It is kept on a log, a separate log sheet. We don't record the kilowatt output in this log.

The water going through the intake subsequently gets into the channel of the Lewis River below the dam. None of it is consumed. As to what would be about the average outflow through the intake during the day, starting in on the 18th, 19th, 20th and 21st,—I can't remember the load. If I could re-

(Testimony of David J. Shore.)

member the load,—any way of my remembering twenty-four readings a day in my mind, I could tell you exactly what was going through the intake, [70] but I am not capable of remembering twenty-four hour readings, and every one of them different on the 20th.

I do not know what sort of a load it would be at this time of the year. It could be 20,000 one hour, and 20,000 dumped on to us in fifteen minutes. The cause of such a heavy dumping would be that some of the other plants in service would be taken out of commission for some reason. Those things vary from day to day, hour to hour. Somebody throws on 10,000 kilowatts some place in a mill; that changes our load immediately. I don't recall whether any such changes took place in December, 1933. As I recollect, the load was an average load. I don't what it was; I can't remember that.

As to whether or not more water or less water goes through the intake than would be the average flow of the water in the Lewis River,—why, the average flow of the Lewis River, at the maximum flow in the machine, would be like a drop in the bucket to the average flow of the Lewis River. The average flow of the Lewis River is around 1500 to 1800 second feet,—I mean 15,000 second feet, against 3000 second feet, something in there; that is a full load on the machine against what I say is the average flow.

As to what means the Company took to maintain the average flow in the river below the dam from

(Testimony of David J. Shore.)

October, 1933, on to after this flood,—well, if we are not spilling, the flow of water in the Lewis River is what is coming through the wheel. By "through the wheel," I mean that intake. As to the correct term, you can call it all intake if you like. It is going through the intake out into the river through the machine.

As to what becomes of the rest of the water that is not going through the intake,—that is not the average flow of the river. That is when the Lewis River is down below what the machine takes. As to what becomes of the water that is not used, if it does not go through the intake,—well, the intake is taking more than comes into the lake, or about the same; the water [71] stands even. As to your thinking I said it was greater a moment ago,—you were talking about the average flow of the Lewis River when I made that remark. With reference to talking of the average flow in the Lewis River,—I do not wish to change my statement regarding it. The average flow of the Lewis River, say from October, 1933, and the 23rd day of December, 1933, is greater than would go through the intake. We spill what don't go through the intake. If we don't spill it, it would build up like in a rain barrel and run over the top. I don't know how much water this dam contains at elevation 237 feet.

I have been superintendent of the plant five years. At elevation 235 there are 300,000 acre feet of water in the dam. At elevation 237 feet, I would say up to

(Testimony of David J. Shore.)

130,000 second feet will be let through the spillways if all the gates are wide open, plus what load was on the machine at that time; that is, 130,000 second feet, with all the gates wide open. Second feet is the amount of water passing a given point in that area; and acre feet is an acre a foot deep. As to translating the second feet into acre feet going through the spillways, say when all five gates and the intake are open, I have an example: I couldn't do that very readily, but if the gates are all open twenty-four hours a day at the elevation of 237 something, we spill 285,000 acre feet. I do not know the number of acre feet which is the average flow of the Lewis River.

On the 20th day of December, 1933, the gates were not all open, and they were not all open at any time of day during the twenty-four hour period of December 19th. As to what gates were open on the 19th of December—No. 1 was up 10 feet; No. 2 was up 8 feet, and No. 3 was up 4 feet. As to what height that would make the water in the lake,—the water could remain the same in the lake if I opened them all. That is simply to take care of the stream flow by opening those gates as necessary. The lake level remains the same. As to whether the opening of the gate has any effect upon the lake level, we don't allow it to. We just open the gates to put through the spillway what isn't going through the machine, to maintain a certain level on the [72] lake. The level of the water on the lake is main-

(Testimony of David J. Shore.)

tained by opening these gates, as I explained. The opening of the gates does not necessarily affect the level of the lake. As to what it does do, this government chart that we go by, that is turned in to the government, we are running, say, at elevation 235 and the water has a tendency to go above 235. We open the gate a little bit. The water has a tendency to go below 235, we close the gate a little bit to maintain that water at a certain level, the same as it keeps steam on a steam gauge on a boiler at a certain pressure.

On the 19th we had gates No. 1, 2 and 3 open this much: No. 1 was open 10 feet; No. 2 was open 18 feet; No. 3 was open 14 feet. As to what level that would keep the water at, I haven't got that elevation here. It would keep it wherever we were trying to keep it at. We wouldn't open any gate enough to pull the water one way or the other. If we maintain a certain level, we do that by regulating the gates. On the 19th the elevation was 235. That means the water was 235 feet above the bed of the Lewis River, and that gives us our working head, 185 feet; not the bed of the Lewis River; the elevation of the water in the Lewis River. When I say the elevation of the water in the Lewis River,—that is elevation 50 against any elevation on the dam.

With those three gates open as I have described, the elevation at the dam, I said, was 235 feet on the 19th. Then the water would be 235 feet deep, less the 50, or 185 feet. The 50 is the elevation of the water in the river. You have to measure between those two points. I do not give the river 50 feet in

(Testimony of David J. Shore.)

depth. That measurement is from sea level. That is what the 235 means. In other words, we subtract 50 from the elevation we have in our books, because it is that much above sea level. The term "235" is the elevation above sea level. In other words, the bottom of the creek, of the river there, is 50 feet above sea level. The water at the tailrace is 50 feet above sea level. The tailrace is just below the dam.

As to the opening and closing of the gates on the 20th, well, [73] at 10 o'clock—No. 1 gate was up 10 foot, No. 2 was up 25, and No. 3 was up 14. At 2:30 P.M. No. 1 was up 25 feet, No. 2 was up 25, No. 3 up 14; and that was keeping the water at elevation 235. That is on the 20th. There is no Mr. Dove in our employ. The man by the name of Dave is Mr. Shore (the witness).

It is a fact that on the 20th I ordered the level of the water raised to 236½ feet. To let the water raise to 236, the gates were left at the same elevation that I just mentioned, to let the water come up into it in the lake.

As to how the gates open and close, by hand power or as to what means we have to do it, we have a motor on all the gates. As to whether they open like a warehouse door, well, it is a radio (radial) gate, quadrant working on a hinge, and the motor is geared from that, and it either pulls it up or puts it down. As to whether, after I ordered the water raised to 236½ feet, the gates were again opened or closed,—we continued to open the gates then from

(Testimony of David J. Shore.)
time to time until we reached the peak of the flood. As to how much we opened the gates, after we raised it to 236½ feet,—well, on the 21st, No. 1, 2 and 3, was up 25 feet, and No. 4 was up 10 feet. At 5:30 on the 21st, Nos. 1, 2 and 3 was up 25 and No. 4 up 14 2/5 feet. That was midnight to eight o'clock in the morning of the 21st. The gates were again closed the 21st. At 2 P.M. the pond went down to elevation, or to a certain spill. The pond stayed right at elevation 236, and we closed No. 4 from 14 to 11 feet. During the period of the 21st the elevation of the pond, according to the records I have before me and from which I am reading, did not go down. The gates were not all opened on the 21st; No. 5 gate was closed. It was opened on the 21st, from four to twelve; No. 5 gate was up four feet at 9 P.M. All the other gates were up; but No. 5 was up four feet. As to whether there was a period of time there on the 21st that I was not able to close them,—there never was a time when we were unable to close the gates. All of them could be closed at all times. We don't require power to close the gates. We close them simply by putting my hand on a lever on a magnetic brake which has a spring tension on. When we take our hand and take the spring tension off, [74] that gate would close too fast. I did not close them by the hand brake; at 12:16 all of the gates were wide open; just after midnight on the 21st,—after 12 o'clock. They remained open until 2 o'clock on the 22nd. As to how they were then closed,—we got a

(Testimony of David J. Shore.)

power line in and hook them up and had the power on them.

As to why I didn't close them by hand,—well, the rain we were having that day; we got three and a half inches of rain, and in our judgment at that time with that rainfall,—our judgment was prompted by other times from the first of the month on where we would have a freshet, and probably drop; we had no reason to think we would not go further than we had. That is the reason we did not drop them. We could have dropped them at any time. We did not have to get another Portland Company's power to do it with. We used our own Company's power. It came over our Clarke County network. I don't know what stations were tied in at that time.

The elevation dropped during the period that the gates were all opened. It was a gradual drop. I don't remember exactly how much until we get this government chart. I would say that it came up to that point just about on the same curve as it went down. A little faster coming up right before twelve o'clock, but it went down gradually; no large drop. It took, I would say in the course of it, maybe hours to go a foot, maybe, or two foot, something like that, but those can all be gotten off these government records. That will show that drop exactly from the time it reached the crest until it went down.

Our own record shows the elevation on the drop. I will look; it is hard to remember all those things. I do not see the elevation here in this book.

(Testimony of David J. Shore.)

As to the width of the gorge below the dam, starting at the power house, I really don't know how wide it is; around a couple of hundred feet—something like that, but that will show on our plans. I would say the bluff [75] on the Clark County side is around 35 or 40 feet on the Clark County side; and on the Cowlitz County side, well right below the dam would be the elevation of the spillway floor. Then, as you leave that on down the river through our village, it goes up to probably 75 or 100. When I speak about our village, that is where Mr. Schmidt and I and the other boys live; that is right close by the dam, probably four or five hundred feet below the dam, my house. My house sits on a practically level bench there. I don't know exactly how high that is above the bed of the river; the contours will show on our plans, the elevation where my house is; the contour lines on the plans will give you all those elevations. I don't remember them definitely, to state. As to whether there is quite a gorge starting up at the dam and leading down the river for a distance,—well, it is about 500 feet probably before it widens out into a wide channel. Then it does not exactly open up into open territory straight downstream. It flows over onto the Clark County side in a curve, and then around the channel and down. I never paid any attention to the exact distance down the river before it reaches the farm land; not to state definitely how far they are. They vary on the

(Testimony of David J. Shore.)

Cowlitz County side; as far as I know, about a half a mile, and a quarter of a mile below that is another one. On the Clark County side I really couldn't say how far down one of them is; I never paid any attention to it, to be honest about it.

(Cross-Examination by Mr. Evans)

That automatic recording device that I mentioned on the dam records the elevation of the water in the lake. That is the government record. That is recorded constantly day and night upon an automatic cylinder, a revolving cylinder. It is a chart in a cylinder that works on a float; that record goes to the Geological Survey in this building. That record will show the elevation every hour in the year. When I speak about elevation 240, that is elevation 240 from datum plane; I don't mean from the bottom of the dam to the top of the water. The water might be very shallow and still be at elevation 240, owing to the contour of the bottom of the river. [76]

The gates are used to maintain the level of the water in the lake. To illustrate, using the moulding of the Judge's desk as an illustration, as the water comes up, if I didn't open the gates the water would keep coming up. In order to hold it at that level we operate these gates. If the water coming down the river is more than is required to pull the load, and

(Testimony of David J. Shore.)

the water starts to build up to a given point, we start to open the gates a little bit to keep it at stream flow. In other words, if the water starts to come above the 235 mark, then we open that little gate a little bit, enough to hold that line. Our effort in the operation of that dam at all times is a stream flow operation. After we get our winter storage, then we try so to operate the gates as to let the outflow in our gates equal the intake of the stream above; just like if we was not there.

Plaintiffs' exhibit 8 shows two gates spilling there. The small gate that we used for most of our operations is the little one over at the far side,—over at the left facing this picture. (Exhibit 8) The lake extends back 12½ miles, I should say.

(Thereupon the cross-examination of the witness Shore was temporarily deferred to permit another witness for plaintiff to testify.)

E. J. F. CALKINS,

a witness for plaintiff, being first duly sworn, testified as follows:

(Direct Examination by Mr. Lord)

My name is E. J. F. Calkins; I reside at Tacoma. I am a civil engineer with the Department of the Interior, Bureau of Geological Survey. I have in my possession the records showing the elevation of

(Testimony of E. J. F. Calkins.)

the reservoir and the records showing the flow of the river at the Ariel dam during the period covering December, 1933. These are the original records. They belong to the Federal Power Commission. The record which you hand me, marked Exhibit 9 for identification, is a record of the gauge height of Lake Merwin reservoir, taken at the dam. The gauging station is on the dam, up the fore bay at the dam. [77]

I am familiar with the mechanism which produces that record. As to how this record is produced mechanically, automatically,—there is a pencil that is operated by a clock, and a sheet of this paper is passed around a cylinder which operates just beneath the pencil. If the cylinder isn't rotated the pencil during the week will make a straight line across the chart. The cylinder has a wheel on one end over which passes a tape, and on the end of that tape in the stilling well is a float, and as the water raises or lowers in the well it turns this wheel by passing this tape over the wheel. That turns the cylinder and causes the pencil to mark variations of the surface of the water on the chart. The chart is graduated so that the rise or fall of the float in feet is translated into the scale that is on this paper; so that regardless of what the elevation would be, the pencil within reasonable limits would mark a corresponding mark on this graph. Of course there are small mechanical errors; we have them as much

as a tenth off within a month's run or a week's run, —a tenth of a foot in elevation. I wouldn't say they wouldn't vary more than that; there are occasions when they have varied more than that, certainly.

This chart (Exhibit 9) shows that the average elevation of the water behind the dam on December 15, 1933, was 234.4 feet; that would be the average elevation for that day. In that twenty-four hour period there was a variation of approximately .2 of a foot. I have the record here for the 16th day of December of this same year. The elevation for that period is 234.6. On December 17th of the same year the average was 234.8. On December 18th the elevation was an average of 235.1. That represents an average rise of .3 of a foot higher. On the 19th of the same year the elevation was 234.5 feet, and on December 20th of that year it was 234.6 feet. On December 21st, 1933, the average elevation was 236.9 feet. That represents a rise of 2.3 feet over the preceding day.

I do not know the area of Lake Merwin directly behind the dam. The records are in the office. My subpoena didn't require me to bring that. I [78] do not know roughly how long that lake is. As to whether I have any idea whether it is a mile long or 50 miles long,—I would say it was between the two. I can't say whether it is more than ten miles long because I haven't been at the station. I wouldn't know whether that lake was ten miles or whether it was twenty miles long.

(Testimony of E. J. F. Calkins.)

I testified that the mean elevation of the lake on the 21st was 236.9 feet. That shows approximately a foot and one-half rise during the day. That graph shows the record from midnight of the 20th to the end of the 21st. The scale is quite small, but as nearly as one can tell from the record the peak elevation was reached at midnight on the 21st, possibly a few minutes before. That is a few minutes before the beginning on the 22nd. The record shows a raise during that day of approximately a foot and one-half. The next chart showing the elevation on the 22nd shows that from the peak, about midnight on the 21st, the stage dropped all during the day of the 22nd. It dropped approximately four feet. On the beginning of that chart, which would be the beginning of that day, the 22nd, the elevation was 237.6, and at the end of that 24-hour period the elevation was 233.6. The records indicate that during that period the lake fell that amount,—approximately four feet.

I was ordered to appear here forthwith and bring this copy and a certified copy—photostatic copy. I was not able to bring the photostatic copy so I brought the original. I will have photostatic copies made of these records from the 15th to the 25th of December, 1933, and have them charged to you, William P. Lord and Ben Anderson.

On December 23, 1933, the stage of the lake rose approximately a half of a foot from the low point

(Testimony of E. J. F. Calkins.)

of the day before. At the end of that twenty-four hour period the elevation was 233.5. The mean elevation for the 24th was 234.3 feet.

As to whether or not the elevation was ever raised to such a height [79] as it was on December 22, 1933,—the stage was higher during 1934. The stage was 238.4 feet during the week of May 5 to May 12, 1934, 238.3 feet.

This paper which you hand me, marked plaintiffs' Exhibit No. 13 for identification, is our records of elevation of Lake Merwin as computed upon the original chart; that is the original. Those other two are prints; as a matter of fact they are duplicates. I brought the copy along to save the original; you may use that without objection. That chart represents the computed water stage elevations as determined from the automatic gauge height chart. That chart discloses that on December 20, 1933, the elevation of the lake was 234.6. And on December 21st the elevation was 236.9, representing a rise of 2.3 of a foot. On December 22nd the record discloses an elevation of 235.5; that is 1.4 feet less than the day before. On December 23, 1933, the elevation was 233.6 feet. I think the discrepancy is that these are mean gauge heights for the day. You were asking a little while ago about maximum variation during the day. This is the mean level for the day. In the event there was a violent change in the elevation it would appear more accurately on the graph that it would on that record, because that record shows

the mean for the 24-hour period. The graph shows the elevation momentarily correct as closely as you can read it.

(Thereupon plaintiffs' exhibit No. 13, a graph showing water elevations of the lake, was received in evidence and marked plaintiffs' Exhibit No. 13.)

Of these three papers which you hand me marked Exhibits 10, 11 and 12, for identification,—No. 11 is the original, showing the daily discharge of Lewis river area for the year ending September 30, 1934, and Nos. 10 and 12 are prints of that original. They are all the same. You may use one of those prints. That chart (Exhibit 11) represents the mean daily flow in cubic feet per second.

A cubic foot per second is a cubic foot of water passing a given point in one second of time. If you had a figure on here of 84,000, that [80] would mean that many cubic feet per second falling, though not necessarily falling over the spillway. The term acre foot is a volume of water equal to one acre in area and one foot in depth. In other words, it is a measurement of quantity. That is also true of second feet; they both represent quantities of water. We compute all our records in this district in acre feet. You will find that at the bottom of the page.

The mean flow on December 17, 1933, was 17,200 second feet. I cannot tell from this chart (Exhibit 11) what the peak flow was on that day. The figure in the upper right-hand corner of this chart (Exhibit 11) represents the maximum peak discharge

(Testimony of E. J. F. Calkins.)

of the Lewis River area for the year ending September 30, 1934. That would be the instantaneous peak for the year. On this chart (Exhibit 11) the peak for the monthly flow is shown only in mean second feet. The mean for the maximum day is shown. The mean on December 17, 1933, was 17,200 second feet. The mean discharge on December 18, 1933 was 46,600 second feet.

I observe the letters written in the chart "E.S.T." (estimated). The gauge height record is obtained on a chart, a graph similar to the one we were just looking at, but a little different. It is a continuous chart record, and the flood of the 21st and the 22nd submerged not only the recording instrument but the house in which it was housed. The clock was stopped and the records for that time were lost. As to the means used for estimating after the clockworks break-down,—well, our maximum discharge we determine from observing the high water marks that were left by the flood, and on these other dates the discharges were determind from gate operation and from lake elevations, information which was furnished by the Inland Power & Light Company. From my experience I would consider those estimates to be accurate. We consider them so thoroughly accurate that we prepared them for publication on a daily basis.

On December 19, 1933, the flow was 40,200 second feet. On December 20, [81] 1933, the flow was 44,600 second feet. On December 21st, the flow was

(Testimony of E. J. F. Calkins.)

84,600 second feet. The record shows the peak to have been at midnight on the 21st, and on that same day, when the spilling increased to 84,600 second feet, the elevation in the lake rose. On December 22 the mean discharge was 114,000 second feet. On that day (the 22nd) the elevation of the lake dropped four feet over the entire day; four feet, from midnight to midnight.

The figure of 129,000, on the top right-hand of the chart, represents the peak discharge some time in the morning of December 22nd, as distinguished from the mean of 114,000 second feet for that day. The distinction between the peak and the mean is, that if you were to take an average of all the water flowing during the day, that would be the mean discharge, but you might during the day have 100,000 second feet and 129,000 second feet. This chart then indicates that at one period in that 24 hours, water was being discharged at the rate of 129,000 cubic feet per second during the morning of December 22nd. I cannot tell from the chart at what time in the morning. The records show that the water level of the lake dropped.

I am a professional engineer, and a college graduate. I am not registered in this state yet. I have had years of training and experience.

Exhibit 14, which you hand me, is a blue print of an original in our office. This chart (Exhibit 14) explains the relation between the discharge and the elevation of the river at the point at which

(Testimony of E. J. F. Calkins.)

the gauge station is located. I would not be able to tell from this chart how much more water would be discharged at an elevation of 236 feet, as compared with four feet less in the lake elevation. As to what I can tell from this chart,—the gauging station for Lewis River at Ariel is located below the dam, and this curve represents the relation between the discharge at that point and the elevation of the river at that point below the dam. This is kept as a part of the records required by the Federal Power Commission. The project is in [82] a Forest Reserve, and streams of that kind are under the supervision of the Federal Power Commission, and they require that records of flow be kept. The records of stream flow are used for innumerable purposes. This particular record is to determine the mean daily flow of the Lewis River at Ariel. It is published in water supply papers, and it is for public use. I don't recall the date the station was established, but it is running at the present time.

As to the average flow of the Lewis River at Ariel,—I could give you that from 1924 to 1933, inclusive. The annual mean is 4,370 second feet. That is the average for all these years. We have records of the mean flow of the Lewis River above the Ariel dam, but it does not include all of the water that enters the reservoir.

(Thereupon plaintiffs' exhibit No. 14, a chart showing the relation between the discharge and the

(Testimony of E. J. F. Calkins.)

elevation of the river at the point at which the gauging station is located, was admitted in evidence and marked Exhibit 14.)

As to the records which are kept with reference to the water entering the dam,—there is a record of Lewis River below Smith Creek. There are records of the Lewis River near Amboy, but I believe that station has been submerged by back water from the dam; but there are records over a long period for that station. We have them in our office; they are here in published form. I don't want to say that over a mean period of a year the flow into Lake Merwin would be substantially the same as the flow below, because I don't know what streams may be entering the lake other than the main stream. You would have to take into consideration the fact of evaporation also if you wanted to go into that much detail.

(Cross-Examination by Mr. Gray)

The mean elevation of the reservoir on December 10, 1933, was 235.2 feet, and the mean discharge on that day was 52,600 second feet. I do not [83] have here the records which would show the peak discharge on that day. My subpoena didn't require that they be presented, but the mean was 52,000 second feet. When I speak of mean, that in effect presupposes adding the hourly discharges, and dividing by 24. On this particular river the stages of the river are affected by power regula-

(Testimony of E. J. F. Calkins.)

tions, and we determined the mean discharge on that stream by means of a mechanical integrator,—an instrument that we can place along in the graph, and read off the mean discharge for the 24 hour period.

That graph is graduated with horizontal and vertical lines. The lines one way show elevation in feet, and the other way they show the hours, so that you can determine from that with reasonable accuracy the discharge at any given time when the record is operating. The down river recorder did not wash out. It was submerged; it made pulp of it. I don't want to say that it was submerged on the 18th, but the records back to the 18th were destroyed; for some reason or other it was not there when the record was removed. Those gauges are installed for the purpose of maintaining permanent records. I don't have clearly in mind how high over this gauge the high waters went, as determined by the flood levels. I know that the recorder was submerged by several feet, and the house was submerged, but by how many feet I don't know. It was recorded by our field men, but I don't have it in mind. In that sort of recording house there is a float that operates in the still well, which makes this pencil record on this disc which is up above, so that the recording disc would be up above the float and above the water level, normally. The high water didn't destroy the instrument or the gauge house, but destroyed the record itself. When I

(Testimony of E. J. F. Calkins.)

say "record", I mean the paper on this roll. After being submerged, none was sent to the office; nothing at all.

The records show that the mean daily flow from midnight on the 20th to midnight on the 21st was 84,600 second feet. If the flow is uniform and constant throughout that 24 hour period, without any variation, then the flow all the time would be 84,600 second feet, if it produces that mean; so when [84] you have a mean of 84,000 second feet, unless the flow is uniform all the time, that mean presupposes some flow much higher than that during that period, and some flow lower than that. When our gauge record was destroyed on the 21st, so that we couldn't determine the actual peak of the 21st on account of the destruction of the record, the only way of calculating the hourly peak on that date would be by reference to the gate openings at the dam at any given period, with the known discharge of each gate under a certain elevation of water.

On May 13, 1934, the elevation of the lake was at 238.4. That was not a flood period in the stream. The stream flow on that day was 2,720 second feet.

The earliest stream flow records that we have on the Lewis River are for Amboy, near Amboy. They go back to February, 1911, and cover the period from February, 1911, to April, 1931. I understand that Amboy is within the territory that was absorbed in Lake Merwin. The mean annual flow of the river at Amboy during the period from 1911

(Testimony of E. J. F. Calkins.)

to 1931 was 4,050 second feet. The maximum flow at Amboy during that same period shows a discharge of 60,000 second feet on December 18, 1917. There are other records of measurements farther up; but they don't cover as long a period. The record for the Lewis River near Cougar runs for the period from July, 1924, to the present time. The mean flow at that point prior to the flood of December, 1933, shown in our records is 2,690 second feet.

The maximum flow at that point (near Cougar), as shown by our records, is a maximum larger than this, but it is on records that I do not have with me. This record, this publication covers to September 19, 1933. I do not know from recollection approximately what it is. During the 1933 flood the gauge at Cougar filled; the banks were washed out and the stilling well and part of the house were filled with sand. I can't say how far above Ariel that is; it is just below the mouth of Swift Creek. I haven't had occasion to [85] determine that. I do know as a matter of fact that it is further up the river than the upper end of Lake Merwin. In other words, the Cougar is wholly unaffected by any operations at Ariel.

Prior to these floods of December, 1933, there is no other record on the Lewis River which shows a higher discharge than the 60,000 second feet at Amboy; so that the mean flow on December 21st, 1933, of 84,600 second feet, that mean flow for that

(Testimony of E. J. F. Calkins.)

twenty-four hour period, was approximately a third higher than the highest previous known flood on the Lewis River, as shown by our records. This 84,600 foot mean discharge of the Lewis River at Ariel on the 21st of December was higher by 24,600 second feet than the flood recorded in 1917 for the Lewis River at Amboy. That 60,000 second feet at Amboy was just an instantaneous peak, for a short period, but at Ariel the discharge was for the whole 24 hour period.

(Redirect Examination by Mr. Anderson)

The recording instrument of which I spoke as being submerged, and its relation to the float mechanism, is so located that there is a well constructed beside the river. On top of the well there is a house, and in this house the recording instrument is set. The well extends below the floor, and the float operates there below the floor. I don't know in this particular instance what the height of the clock would be above the level of the water, but the water rose and inundated the clockworks and the chart itself and the building. It set over as a sort of a well alongside the river. The fact that the water was allowed to raise to the point of elevation 236 feet had nothing to do with the inundation of the clockworks. You are now talking about the rise of the water to 236 feet elevation in the reservoir; but we are talking about a gauging station situated below the reservoir. My figures here are

(Testimony of E. J. F. Calkins.)

taken from the gauging station below,—the gauging station for the discharge of the river. I am not talking about the elevation chart at all. The river recorder was the instrument that was put out of commission. We were then compelled to estimate the flow. It was estimated in our office, [86] but the original information is in the possession of the Power Company, in their log. These estimated figures which I have testified to are not the company's own figures. They are computed from our own records of elevation, and from the company's figures of gate operation and power load. It is my recollection that one of our men went to their office and took the figures from the company's log. We made computations from those figures furnished by the company.

I testified with reference to a gauging station at the town of Amboy, situated possibly southwest of the upper end of the Ariel reservoir. I don't know how many miles from the Ariel dam, but in my opinion it is about ten miles. The Geological Survey formerly had a gauging station there, which was operated at that time from the Portland office. We do not have one there now. The gauging station at the Ariel dam operated parallel with the one at Amboy for several years. We have discontinued the one at Amboy. I don't want to be quoted as saying that the Amboy station is ten miles from the Ariel dam; it is above the Ariel dam. I am not sufficiently familiar with the region to know whether or

(Testimony of E. J. F. Calkins.)

not there are any intervening streams flowing into the Lewis River between Amboy and the present gauging station. I have no map with me. I can determine it by taking a little time to locate the station on the map. I don't know from my present knowledge whethere there are any intervening streams between Amboy and the Ariel dam or not. I know whether there would be a comparison for the purpose of comparing the stream flows between the former gauging station at Amboy and the present gauging station at Ariel dam. I know the lower gauging station at Ariel is farther down stream than the station at Amboy but I don't know whether there are any intervening streams or underground rivers. As to whether the flow would be the same at those two points, Amboy and below Ariel,—that question can be answered, I think, from the records. I have here a water supply paper 724, containing a record of Lewis River near Amboy for the period October, 1930, to April, 1931, and there is a parallel record in the same publication for Lewis River at Ariel. A daily comparison would not be fair because of power regulations. [87] The monthly mean discharge at Amboy on the Lewis River for October, 1931, was 54,800 acre feet, and for October on the Lewis River at Ariel was 57,400 acre feet. As to how mean flow of the Lewis River at Amboy compares with the mean flow below Ariel dam,—I can give you that on a monthly basis. There are parallel records which might show the relation day

(Testimony of E. J. F. Calkins.)

by day, but I do not have them here. The figure I quoted was after the dam was built. I have comparisons before on the same monthly basis; the dailies are not shown in this publication.

In October, 1924, the mean discharge at Amboy was 1220 second feet, and at Ariel it was 1210. For November, 1924, at Amboy, 1820, and at Ariel it was 1980. December for Amboy, 5290; for Ariel 6270. For January, 4100 for Amboy; 4680 for Ariel. For February, Amboy 9990, and 12,000 for Ariel. The records indicate a greater flowage at Ariel than there was at—(Amboy). The record shows that there is a difference in drainage area, and it shows what the difference is.

(Re-cross Examination by Mr. Gray)

Continuing the comparisons so as to get the average over the period of twelve months, from February, 1925, where I stopped;—March, 1925, shows Amboy 2800; Ariel 2920. For April, 2840 at Amboy, 2950 at Ariel. For May, 2850 at Amboy, 2920 at Ariel; June is the same for both. For July, 912 at Amboy, and 913 for Ariel. I would rather not testify as to the percent of allowance of increase at Ariel.

These records which are submitted to us by the Inland Power & Light Company are submitted to our office under requirements by the Federal Power Commission. The company furnishes these water stage record charts, and in the form required to be submitted to us by the Federal Power Commission.

(Testimony of E. J. F. Calkins.)

They are the original records of those recording devices. The published records have been computed from these as the authentic official records of stream elevations and flows at that dam. [88]

Nothing happened to the elevation or recording gauges at the Ariel dam during this flood. We had a complete record at that point, but the one downstream was flooded out. The records furnished at the Ariel dam itself, where we know the elevation, the size of the gates, the extent to which they are opened at any given time, and the recordings shown on that chart, would enable me or any other competent person to compute with reasonable accuracy the discharge of second feet at any given time.

As to whether the gauging records downstream, and which were submerged in this flood, really act merely as a check on those Ariel records,—well, ordinarily we wouldn't go through the immense amount of detail to compute the record from the gate openings and reservoir heights, when we have a record down below. In computing the record flow down at the river station, it is just a matter of comparing the mean daily discharge with the curve, showing the relation between the stage and discharge. The other method is long and very tedious. The calculations between the two points, however, are susceptible of comparing and checking, and should be checked.

Thereupon

GEORGE FREEMAN,

a witness on behalf of plaintiffs, being first duly sworn, testified as follows:

(Direct Examination by Mr. Lord)

I reside about four miles above the Ariel dam; I have lived there eight years. I was there prior to the building of the dam. There is a main highway leading from Ariel and just above the dam; that is the main highway that goes on up to Cougar and Yale and places of that kind. The highway comes nearest to the river, or Lake Merwin, right just above the dam. When I go up on that road, past Lake Merwin, past the dam, I am higher than the dam. I couldn't say how much higher. That is something that I never paid no attention to. I am able to see the water in the dam from the point that I referred to. Just above the power house you could see objects that might be close in Lake Merwin, like logs, or skiffs, or people bathing. And from this point that I refer to, you can see the top of the dam; what all is above water. From the [89] place on the road that I referred to, you couldn't tell exactly whether Lake Merwin is full or not. We can tell when it is way down; but we couldn't tell how near to the top it is.

I was on my place during the month of December, 1933. I couldn't be sure whether I was there between the 17th and the 22nd. I couldn't recall the condition of the weather from the 15th

(Testimony of George Freeman.)

on until the 23rd or 4th of December. It rained a little now and then; that's all I can say. I did not go down to the lake. I don't know the height of the water in the lake between the 15th——. I recall talking and making inquiries to Mr. Grieger last week, and that was the first time that I had ever seen you. I haven't known Mr. Grieger for quite a long time. As to whether I know him by sight, well, I've seen the man before but not to know him. I get confused on the time. It was Friday that I saw you, wasn't it? It was some time the latter part of last week. As to whether at that time I told you that I had gone to the Ariel store on Wednesday and looked at the water in Lake Merwin, and that the gates were closed of the dam, that the water was full up practically to the top of the dam,—that was before the flood, but I couldn't say what day it was. I recall going down to the store; how long before the flood it was I couldn't say. At that time I was able to see the water in the lake. It was up pretty well, but I can't make a definite statement on that distance. I did not see the spillways, and don't know them. I saw the gates from the road.

I couldn't say how long it was before the flood that I went down to Ariel; I couldn't say whether it was within a week of the flood. I couldn't say whether I didn't tell you at that time that it was just one day before the flood that I went; it was before the flood. I know it was raining a little at

(Testimony of George Freeman.)
the time we went down, I don't recall anything about the rain. It would have to be in December. I couldn't be sure about what part of December it was.

(Witness excused; no cross-examination.)

Thereupon

FRANK HASTING MILES,

a witness on behalf of the plaintiffs, [90] being first duly sworn, testified as follows:

(Direct Examination by Mr. Lord)

My name is Frank Hasting Miles; I live on the Lewis River about three miles below the Ariel dam. My property is located on higher land than the bottom lands. I have lived on the Lewis River since February 13, 1913. I am a farmer, poultry man and dairy man. I have been employed in another vocation. I am sorry to say I was on public construction for thirty-three years;—waterworks, railroads, or anything that the company could bring up that I was working for. I engaged in work in connection with the impounding of waters for reservoir purposes. In my time I think I have built about seven dams, but they was for domestic purposes, which didn't store much water. Most of them was for seepage, storage, such as in Butte, Montana, where we stored 13,000,000, and we thought that was lots of water.

(Testimony of Frank Hasting Miles.

I never kept or made any records of the height of water in the Lewis River below the dam. I made some markings on trees. The first marking I took was I think in June, 1917; that is the first high water I seen. I marked a tree. I can show you the tree any time. I've got the mark on the tree. That is all I done; I never took no records. That day the water raised, I had to go and carry my child, who was going to school, across this ravine, and I had rubber boots, and that was high water at that time. I can't say how high that water was above the river channel because I don't know how deep the river was, but there was a rise of about eight feet in the river at that time above the regular flow of the river; that ain't saying the bottom of the river. We call it an eight foot rise; that is the highest I ever seen it. It extended over to Mr. Grieger's property; I know that because a logging outfit, whose name I forget, cleaned the river every year and they had a couple of boats there; they called one the "Speilei", and they sawed a lot of ties, and of course there was a low place on there towards Mr. Grieger's property, and they had drove a few piling in there so to shoot them around, and carry them down the river; that is all I——. [91]

I was in court this morning and I heard one of the witnesses speaking about what I call a jetty there along this property; right where there is a few piling to throw that water around so the logs wouldn't run in the little holes. You see if they

(Testimony of Frank Hasting Miles.

run in that hole, they run about a quarter of a mile right along between there and the river. This was the river, but it was just a little stream that run down alongside, and eventually run back into the river, you see. I seen this little jetty when it was built in there; I know the men that built it. It was just built for the purpose of keeping the logs from going in there, to turn them down into the larger part of the channel.

During the several years I have lived there the dam has been constructed at Ariel. I know Mr. Shore and Mr. Schmidt. As to whether I know any other employee at the dam that was there in December, 1933,—I know them all. I know Mr. Webster, and I know Mr. McKee, only I don't know the attorneys. I am not much acquainted with them. Mr. McKee is not here; I haven't seen him today. He is president of the company. As to what Mr. Webster does,—Mr. Webster bought my place and sent me the check for it for the Inland Power & Light Company, which is now known as the Northwestern Electric Company.

In December, 1933, it was very rainy. The rain didn't affect the flow of the Lewis River down at my place, but it was filling the dam, or the lake as they call it, the reservoir. It is three miles from my place to the dam. Not much of anything was happening to the Lewis River, that is, down where I live, three miles below the dam, because they run the wheel up there, and they use just

(Testimony of Frank Hasting Miles.

what comes in, and then what is over they use for storage. Sure I seen what was taking place in the dam during that rainy period; the lake was raising, of course. During the period up to December 22, 1933, it was pretty near overflowing. It is pretty hard to say actually how near the top of the dam the water was, because you can't get in front of the dam, see. You can't get directly back of the dam. It is probably anywhere from six feet here down to a hundred feet down there (indicating). Of course you can get back there maybe 50 feet or more, but you can't tell anything about the water [92] there. Well, you come around here in front, and here is the dam comes this way, and (indicating) it is on a radius of probably a thousand feet in a circle, you see. Well, you can't get around on the side of it there. You can get at the end and look that way, and maybe you will say that day probably two feet, as near as I can guess at it, two feet from the top of the coping of the dam. I would judge the coping is about six inches.

As to whether I know by what means the dam was equipped to release the stored waters—I think I do. While I am not very bright about electricity, there is, I believe, five gates, a little one and four larger ones, and each one has got a big concrete pier built up and on that sets a crab or winch, I don't know what they call it, I call it a crab, that is run by electricity; and when they want to raise the dam

(Testimony of Frank Hasting Miles.

—to lower the water, why they go over there and do something with this electricity and up it slides. That is about all I know about it. As to my knowing how it is closed,—well, they just go up and press a lever, and the wheel starts, and it just starts back.

I observed these flood gates during the period of this heavy rain. Flood gates is all the gates there is there; there is these five flood gates, and they control the water, and I don't know, you can call them flood gates or permanent gates or whatever gates you want to call them, but flood gates—well, call them flood gates, that is what they raise to let the water out. They don't lower it to let it out; they raise the gates to let the water out. The effect of the raising is to let the water go out underneath. Where I used to work we opened a hydraulic valve to let the water out. Here they raise it and let it go out.

As to whether I noticed whether those gates were opened or closed at any time during the month of December, 1933, prior to the 22nd,—yes, I believe the small one, they call No. 1, that was pretty well open pretty much of the time. That is, if I remember right, and I think there was another time—well, in fact I went up there maybe every three or four days, or maybe [93] every other day, because I had a stand-in with the superintendent of the fish hatchery there, and he had a car and he went up to look at the traps, and always said, "Come on, Dad, and take a ride", and I get in and that is how I seen the gates about every day, and that is how I seen the

(Testimony of Frank Hasting Miles.

reservoir. I went down around into the company's yard at that time, and went into the control room, and I met Mr. Smith, sometimes, and I met Mr. Shore sometimes, and I met every man that was on the shift, and had a little chat with them. I did not talk to Mr. Shore about the height of the water in the dam, not down at the station.

I was at the dam on December 20th; I did not in measurements or in figures note the height of the water impounded on that day. I just noticed how near it was to the top of the coping on the dam. It was about a foot and one-half, or eighteen inches. I did not observe the condition of the gates. The gates was about like they was, but you can't tell how the gates is, no outsider coming along and say that the gate stands at such a point, zero, or whatever——. The gates were about the same as the day before. The number 1 was up about ten feet, or maybe more, and number 2, as they would call it, I would call it number 2, was out six or eight feet, but the others was tight. Yep, I was there again on the 21st; that was the day she was just about overflowing. By looking at it across the channel you would find that it was up against the coping, that would be six inches, but of course it could not have been because the glistening of the water would make some difference.

Mr. Shore was not there that day. There was a man there they call the roustabout. I don't know what his name is. The gates on the 21st were about

(Testimony of Frank Hasting Miles.

in same condition as they was the last time I seen them. On the 21st the gates was just the same as the day before. They might have been up a little; not much. I was at the dam on the following day, the 22nd, but I don't suppose you will allow me to tell what I see if I did. No use in my sitting here and talking when you won't believe what I tell you—that is you won't let me tell what happened and what I seen. I will tell what I saw [94] on the 22nd if the Judge, your Honor here, won't stop me and I won't tell a lie. The next morning I went down to what we call the little pump station about a half mile or three-quarters of a mile from my place, and the water was down about four feet below the coping in the morning, nine o'clock. Well, of course I did not walk from there, because a man came and asked me if I didn't want to ride to the fish hatchery and I got in and rode with him, to the fish hatchery, and of course the water had come up that night, but not a great deal, just striking along the edges as I saw on the road; the water was just to the edge of the grass, the road. That would be about five feet above the average level of the stream. That was on the 21st at about half past ten or eleven. That was then about four feet lower than the chip on the tree, which I made in 1917.

I did not go back there again that day; I went back the next day. You didn't let me tell you what I seen before, so you will have no comparison to what I am going to tell you now. At this pump

(Testimony of Frank Hasting Miles.

station, the water was four feet below the coping, see. The little pump station that the Northwestern built there, to pump up water to the fish hatchery, to the fish pond, see? The idea they built the dam, and they built the traps in the dam so that when the fish went up the river they went in these traps. They put an elevator in there, and they put in steel tanks—the poles, it holds—I don't know how many gallons of water, but seventy-five fish is a load. I counted them many times as an accommodation for the superintendent. Well, they hist them up and then let them down to this place, and that is the pump station I am telling you about that pumps in the water what to freshen up this water whenever they get eight or ten thousand fish in there, they pump in and freshen the water. The water was up to four feet of that coping.

Just tell me what you want me to say and I will say it. That pump there at the fish hatchery is about three and one-half miles from the Ariel dam, and a half a mile below my house. That pump was still apumping on the 21st; it was still working. The higher the water got the better she [95] worked. It was about eleven o'clock in the daytime that I saw it when it was still working. I did not see it later on in the evening. I saw it the next day. The next day was the 22nd, when she was stopped, and the water was up running in where the insulators runs in and goes down to the pump. That insulator that I refer to is about seven feet above the floor, or

(Testimony of Frank Hasting Miles.

whatever you call it,—the coping. That coping is up on the level of the floor. That is seven feet higher.

I don't know so much about the average height of the water along at the fish hatchery, because my place was right above,—half a mile, say, above the hatchery, but I did know the water there, at least. I don't know what the average height of the water would be at the fish hatchery; I know at my place. I don't know how much higher the water was over the pump than it was the preceding day, when I was there on the 22nd. At the time I saw the water when it had not drowned out the pump at the fish hatchery it was about four feet below the coping, and when I next saw it it was about seven feet above the coping. I live four miles above Mr. Grieger's place. I went down the road as far as the fish hatchery, but I had to go around by the pipe line; the road was flooded. I saw the tree again where I had made the marking in 1917. I saw that the water was seven feet higher than it was in 1917, by actual measurement, and the mark is there now; seven feet higher than it was on the 17th. That was in the forenoon and in the afternoon. I don't know what day it was; I know it was on the 23rd, I believe. I did not go up to the dam after the 21st. It was a week before I went up after that. I went down below. I stayed around home.

(Testimony of Frank Hasting Miles.

(Cross-Examination by Mr. Evans)

I made a mark on the tree at the time of the 1917 flood. Where I was born and raised they called it a cottonwood tree. They call it a "quackermast" in this country, an old fashioned cottonwood. It is about three foot in diameter. This last flood was above the mark on that. It was very rainy. I don't know whether I ever saw it rain any more than it did in that [96] month of December, for a month; I seen it rain quite a lot since I have been here. It rained quite a lot then. I saw the water in the lake when I went down with the man at the fish hatchery. I went to the dam, I went down below before it washed out, and they allowed us to drive down around, and clear down into the station. It was before the flood when I was at the dam. I went across the bridge that was below the dam, and drove down right down to the control room. As to how close I got to the lake up above, I got within the thickness of the dam. I told you I could not tell then where the water was; I told you I don't know how high it was in there. Every day I was there they were spilling some water through the gates; I don't know how much; I could see how far the gates were opened. Every day the gates was opened some, always spilling some water—only in the summer time——.

The property that I sold to the company was below the damsite, about four and one-half miles;

(Testimony of Frank Hasting Miles.

that is some of the property that went into the fish hatchery, that creek of mine; that is why they wanted to condemn my whole property to get the creek.

I remember where these pilings were at Grieger's place. They were put in at what I described as a low place. As to whether the river came down and made a turn and these pilings were put right at that turn,—not the way you got it; it was put in this way. The piling was where the river come right down like this. The river made a turn right here, went over there against a solid bank, and right in here there was a sag, and these logs and ties used to come down, and when the water was up a little bit, went over in here, over in this sag, and went down there. What is the place that is washed out now. There was a sag in a low place before I first came to the country; and there has been a low swale all these years; it was a low place. I don't think it was washed out considerably back of those piles. I don't think there was some holes in there. As to whether I have been down in there recently,—I have been all over that country. [97]

"Q. In every freshet you had, they floated logs, they went up across the Grieger property?

A. No.

Q. Where did they go?

A. When they took the piling in they went along there.

(Testimony of Frank Hasting Miles.

Q. I say, if the piling was not there it would throw it right across?

A. It would throw it in the ground below the sag."

That low sag was a soil that is caused from so much water in sand, and the bows and stuff comes along, and turns it kind of black and mucky. There was really no live vegetation on this sag,—just the pine boughs and the knots and stuff that come washed down the river, you know of an ordinary tide. The condition that I am describing now was before this 1933 flood.

(Re-Direct Examination by Mr. Lord)

Colvin Creek flows into the Lewis River between the pump and the dam. It flows about a thousand miners' inches.

As to the raise of the water over that pump that morning.—well, there was about a ten foot stock on that pump to the coping, and there was about an eight foot raise on this morning; that would be about eighteen feet on top of the electric pump, a centrifugal pump. As to how far that pump is from where the river flows past Griegers,—the river hits a point of the coupon and it did wash out quite a hole at that time right there, but not clear around. I think I made that observation about ten o'clock in the morning of the 21st. I went down there about ten o'clock the next day. The water went down from the height down to the coupon or the coping. The

(Testimony of Frank Hasting Miles.

It is about nine or ten feet above the ordinary flow coping is located right on top of the concrete wall. of the water.

(Re-Cross Examination by Mr. Evans)

There is a creek below the dam that comes in there some place. That is the creek that the company bought for to get my place, Colvin Creek [98] is what I know the name of it. As to whether it was in flood at that time,—yes, it raised quite well. As to how much it raised,—I don't know how far in the hills it runs back. It is about twenty-eight or thirty feet wide. As to how high the banks are,—I should judge that bridge is probably eighteen feet high, and at the highest the river was up within three feet of the floor of the bridge probably. As to how deep the water got in that,—well, I seen it when it was about an inch and a half. On the 21st it must have been eighteen feet in the creek where it backed in; that is where it came into the river. Of course a mile up that creek I never seen it. That creek is below the Ariel dam and below Mr. Grieger's property. As to whether there is quite a considerable territory there below the dam and the Grieger's place that drains into the Lewis River,—well, not so much on either side. On either side the river is very abrupt.

The pump that I am talking about is half a mile up the road from the fish hatchery. According to the stakes they put along there when they built the road, I believe that is about stake 42. I should

(Testimony of Frank Hasting Miles.

say this creek is about three and a half or four miles below the Ariel dam towards Woodland; I don't know exactly, you see. On the 21st, I found the water at its highest peak, eighteen feet deep there, and eight feet over the top of the coping. That was about ten o'clock in the morning of the 21st. At ten, eleven or twelve, I went down to the fish hatchery and back; and that is the highest water I saw. On the 22nd I went back and the water had dropped about six or eight feet.

Thereupon

SAM WILKESON,

a witness on behalf of the plaintiffs, being duly sworn, testified as follows:

(Direct Examination by Mr. Lord)

I live along the highway about three and one-half miles above the Ariel dam. I have lived there about forty-nine years. My occupation is logging, and farming, and all kinds. I have seen the river. As to whether I saw the river at the time of this flood,—well, I saw it, but I was not [99] right down to it when it was the highest; when it was the highest I was home. I do not recollect the days when the water was the highest. I could not tell you the day, because I did not pay no attention to them. I stayed home all the time. I was not down

(Testimony of Sam Wilkeson.)

on the road for a week or ten days before the flood came there. I did not at that time observe the height of the water in the dam. As to whether I noticed the gates,—well, you look across there and see, but you cannot tell how high the water is on them, between a quarter of a mile or better. As to whether I observed the height of the water a week or ten days before the flood,—well, you just drive down the road and you look across; I never stopped. I did not observe how high the water was.

As to whether I had a talk with Mr. Grieger and you last Friday, yes sir, I saw you. As to whether I said to you at that time, that I had been up and down the highway,—well, that was after the flood.

(No cross-examination)

Thereupon

DAVID J. SHORE,

a witness for plaintiff, previously sworn, resumed the stand.

(Cross-Examination by Mr. Evans)

I testified yesterday that the gates of the dam could be closed by hand. I referred to a brake and a brake drum. Defendant's Exhibit A-1 shows a magnetic brake on the motor, between the gearing and the gates. That is the brake (indicating on Defendant's Exhibit A-1); that brake right here is the one we can operate by hand to drop the gate at any time. Just let go with that little lever, and

(Testimony of David J. Shore.)

the brakes stop and grab at wherever you want it.

(Thereupon a picture showing the hand brake to operate the gate was admitted in evidence and marked Defendant's Exhibit A-1.)

When we release the brake the gate will close by gravity. The last day prior to December 21st when I had all the gates completely closed, was December 1st, I think. Referring to my operating record and to my gate operation day by day, beginning with December 1st, down to and including [100] December 21st,—on December 1st we were spilling 1,000 at 4 P.M. At that time gate No. 1 was up three foot; all the rest were closed.

The book that I have in my hand is our daily log book, the entire log book of the station; kilowatt hours and everything is on this log book. There is a page for each 24 hours in the month of December, 1933. Each page shows the total generated, the total delivered to the high line; it shows the gate openings, the rainfall, the maximum and minimum temperatures; everything that occurred on that day. I am now looking at the page covering December 2. The pages in the book are not numbered. The pages here come right on in sequence from December 2 to and including December 21st. That is the company's record of the operation of the gates; the spill, and the storage.

(Thereupon the pages from the company's log book, covering the dates of December 2 to 21, both inclusive, were admitted in evidence and marked Defendant's Exhibit A-2.)

(Testimony of David J. Shore.)

The record shows that on December 2nd we were spilling 1,000. No. 1 gate was up 3 foot.

On December 3rd, we were spilling 1,000. No. 1 was up 3 foot at 8 o'clock, my first reading. At one o'clock that day we were spilling 2,000 second feet. No. 1 was up seven feet.

On December 4th, we were spilling 2,000 second feet at midnight. No. 1 was up seven feet. Spilling 1,000 at 6:30 A.M.; No. 1 was up three feet.

December 5, we were spilling 1,000 at midnight; No. 1 up three. Spilling 3,000 second feet at 6:30 A.M. Spilling 16,000 second feet at 4:15 P.M.; No. 1 up seven; it does not show plainly on No. 1 At 9:30 P.M. spilling 22,000 second feet; No. 1 up 24, No. 2 up seven, No. 3 up seven. Spilling 33,000 at 11.15 P.M., No. 1 up 24, No. 2 up 12, No. 3 up 12. That shows the variation of the gates as the stream came in.

On December 6th: spilling 23,000 at midnight; No. 1 up 24, No. 2 up 12, No. 3 up 12. Spilling 41,000 at 7 A.M. The gates remained the same. Spilling 35,000 at 8 P.M.; No. 1 was up the same; No. 2 up 15, No. 3 up 15. [101]

December 7th: spilling 35,000 at midnight; No. 1 up the same, No. 2 up 15, No. 3 up 15. Spilling 20,000 at 4 P.M.; No. 1 up 24, No. 2 up six, No. 3 up six.

On December 8th: spilling 20,000 at 8 P.M.; No. 1 up 24, No. 2 up six, No. 3 up six. Spilling

(Testimony of David J. Shore.)

17,000 at 1 A.M.; No. 1 up 10, No. 2 up six, and No. 3 up six.

December 9th: Spilling 17,000 at midnight; 1 up 10, 2 up 6, and 3 up 2½. Spilling 30,000 at 8 A.M.; 1 up 21, 2 and 3 up 10. Spilling 38,000 at 2 P.M.; 1 up 21, 2 and 3 up 14. Spilling 43,000 at 3 P.M.; No. 1 up 21, 2 and 3 up 16. Spill 52,000 feet at 4 P.M.; No. 1 up 24, No. 2 up 26, No. 3 up 16. During that day we changed those gates six times, with the flow of the stream. We opened them to hold the water at a certain level in the pond, as the stream increased. On December 10th: Spilling 52,000 second feet at midnight; No. 1 up 24, 2 up 26, and 3 up 16. Spilling 61,000 second feet at 12.30 A.M. on December 10th, 1933.

I have been there ever since the dam started operating. In my experience with the plant I never saw a spill in excess of 61,000, as shown there on December 10th.

December 11th: Spilling 38,000 second feet at midnight; No. 1 up 14, 2 up 26, 3 up 7. Spilling 34,000 second feet at 3 A.M. No. 1 gate closed. Spilling 24,000 second feet at 9:30 A.M. No. 2 up 14, No. 3 up 7½. Spilling 29,000 at 11 A.M.; 1 up 17, 2 up 14, 3 up 7. Spilling 30,000 at 1 P.M.; 1 up 24, 2 up 14, 3 up 7. Spilling 34,000 at 5 P.M.; 1 up 24, 2 up 17, 3 up 7.

On the 12th: Spilling 34,000 second feet at midnight; 1 up 24, 2 up 17, 3 up 7.

On the 13th: Spilling 30,000 second feet at midnight; 1 up 7, 2 up 17, 3 up 4½. At 11 A.M., spill-

(Testimony of David J. Shore.)

ing 25,000; 1 up 24, 2 up 17, 1 up 24. Spilling 22,000 at 3 P.M.; 1 up 10, 2 up 10, 2 up 17. Spilling 20,000 [102] at 9 P.M.; 1 up 24, 2 up 17. When I say, "1 up 17", or "1 up 24",—that is the height we raised the gate. When I say "2 up 17", I mean I raised it up 17 feet, and when I say spilling a certain quantity,—that is the second feet being spilled.

December 14th: Spilling 20,000 at midnight; No. 1 up 24, No. 2 up 17. Spilling 18,000 second feet at 10 A.M., No. 1 up 10½, 2 up 13.

December 15th: Spilling 16,000 feet at midnight; No. 1 up 3 feet, 2 up 13 feet. Spilling 15,000 second feet at 6 A.M.; No. 1 up 3 feet, No. 2 up 13. Spilling 10,000 second feet at 6 A.M.; No. 1 up 14, 2 up 5.

December 16th: Spilling 10,000 second feet at midnight; 1 up 14, 2 up 5½.

December 17th: Spilling 10,000 second feet at midnight, 1 up 14 feet, 2 up 5 feet. Spilling 12,000 second feet at 1 P.M.; 1 up 20½, 2 up 5. Spilling 18,000 second feet at 3 P.M.; 1 up 20, 2 up 10. Spilling 26,000 at 5 P.M.; 1 up 20. Spilling 40,000 at 7:15 P.M.; one up 20 feet, 2 up 17, 3 up 12.

December 18th: Spilling 40,000 at midnight; 1 up 10, 2 up 17, 3 up 14. Spilling 43,000 at 1 A.M.; 1 up 26, 2 up 17, 3 up 14. Spilling 44,000 at 6 P.M.; No. 1 closed; 2 up 25, 3 up 14½. Spilling 48,000 at 8 P.M.; 1 up 14, 2 up 25, 3 up 14.

December 19th: Spilling 42,000 second feet at 12:20; 1 up 14, 2 up 25, and 3 up 14. Spilling 42,000 at 9 A.M.; 1 closed. 2 up 25, 3 up 14. Spill-

(Testimony of David J. Shore.)

ing 21,000 at 11:30 A.M.; 1 up 10, 2 up 18, 3 up 14. Spilling 38,000 at 8 P.M.; 2 up 18, 3 up 14, and No. 1 up 10; that was the same.

December 20: Spilling 38,000 at midnight; No. 1 up 10, No. 2 up 18, 3 up 14. Spilling 44,400 at 10 A.M.; 1 up 25, 2 up 18, 3 up 14. Spilling 46,000 at 11 o'clock; 1 up 10, 2 up 25, 3 up 14. Spilling 56,000 at 2:30 P.M.; 1 up 24, 2 up 25, and 3 up 14. Spilling 61,000 second feet at 9 P.M.; 1 up 25, 2 up 25, and 3 up 25. [103]

Now this is on December 21st: Spilling 61,000 at 12 midnight; 1 up 25, 2 up 25, 3 up 25. Spilling 73,000 at 12:45 A.M.; 1, 2 and 3 up 25, 4 up 10. Spilling 76,000 feet at 4 A.M.; 1, 2 and 3 up 25, and 4 up 12. Spilling 79,000 second feet at 5:30 A.M.; 1, 2 and 3 up 25, 4 up 14. Spilling 79,000 at 5:30 A.M.; 1, 2 and 3 up 25, No. 4 up 14. Spilling 73,000 at 7:45 A.M.; 1, 2 and 3 up 25, 4 up 10. Spilling 75,000 second feet at 2 P.M.; 1, 2 and 3 up 25, No. 4 up 11. Spilling 78,000 at 3:30 P.M.; 1, 2 and 3 up 25, 4 up 14. Spilling 85,000 at 4 P.M.; 1, 2 and 3 up 24, 4 up 18. Spilling 90,000 at 6:30 P.M.; 1, 2 and 3 up 25, 4 up 18. Spilling 100,000 at 9 P.M.; 1, 2 and 3 and 4 up 26.

There was no trouble in taking care of that discharge of 100,000 second feet at 9 P.M. It didn't interfere with our plant or anything else.

Spilling 105,000 at 10 P.M. That 105,000 began to interfere, but it did not, however, put the power

(Testimony of David J. Shore.)

house out of commission. No. 1, 2, 3 and 4 up 25; No. 5 up 9. Spilling 100,000 at 11 P.M., 1, 2, 3 and 4 up 26, No. 5 up 4. That is the end of the record at midnight of the 21st.

Yesterday on my direct examination I told counsel that on the 21st I raised the lake and stored water. On that day I ordered the lake to be raised a foot; I ordered that on the night of the 20th. I would say around 9:30 I gave the order. The storage of the next day, on the 21st, would show in the report which I just gave you. On the 21st we held back some water; I couldn't *saw* exactly how much; about a foot and one-half. I was at Woodland, Washington, on the evening of the 20th when I determined to hold back some water.

All of the water which comes out of the Lewis River in the vicinity of Woodland has necessarily to come by the channel and the property of Mr. Grieger, the plaintiff in this action.

With reference to the Lewis River in the vicinity of Woodland and the waters as I found them at Woodland on the 20th,—that evening the [104] water was coming up very close to the fire hall. The water was coming up very close to the street, and the apparatus was being taken out of the fire barn and taken across the street at the time I went to Woodland. That was in the road entering Woodland, as you turn the main street; the fire barn is right on that turn. By the fire barn, I mean the

(Testimony of David J. Shore.)

City Fire Department. The water at that time was within three or four feet of the road.

Woodland is fairly level. It is on the banks of the Lewis River. I was in to the telephone office around 9 o'clock. The time I was there the people were panicky, and expecting higher water. At that time I got in communication with the plant over the telephone, and instructed them to let the water come up a foot. I went back to the dam shortly after that, on the evening of the 20th. I had a telephone connection there at the dam, and was in telephone communication with the town of Woodland by telephone until after the peak of the flood, and I conferred back and forth about the water condition there and the water condition there at Ariel. I advised them of my condition and they advised me of theirs. I had the thought of the people in mind,—was trying to cooperate with them.

It was raining at that time; a very heavy rain. As we approached midnight on the 21st, that rain did not cease at all. It was raining very heavy on the 21st, and still raining on the 22nd; part of the 22nd it was as heavy.

As to the events at the Ariel dam on the night of the 21st, beginning say at 6 o'clock in the afternoon or evening,—well, the water kept increasing, gradually up until 10 o'clock. At 10 o'clock we began to notice the water come up. We had a spill, as I mentioned before, and at 10:55, I think it was,

(Testimony of David J. Shore.)

the water begin coming over our road and run into the power house. As to where the road was,—there was a bridge coming down from the village and crossing the river, at the end of the spillway, and the water, filling up over that bank, ran down the road that went to the power house. At that time the water began coming down the road, and I ordered the big machine taken off the line [105] as the water begin to come into the power house. The water begin rising steadily from that time on, and we made every effort we could to blockade the doors. The elevation kept rising very steadily, and we lost telephone communication at about 11:30, and the seven boys who were there with me got together and we decided that we should take the last gate up the full amount, and then close down, and we left the power house. When we did close we were wading in approximately a foot of water at the house machine; the last machine we had running. We (it) had broke in the blacksmith door, and large cores and roots of logs flowed through the generator floor, and the basement was practically filled at that time, and we were waiting (wading). Then outside of the building the current was so terrific it moved loading tongs, which weighed a matter of 250 pounds, a distance of our transformer platform, which I will say offhand is maybe 150 foot long. The water came up the road that is below the dam and leads to the power house at the point

(Testimony of David J. Shore.)

of the bridge which was above the power house roof. The water first went up the road and interfered with the power house at around 10:55. At that time we were spilling 105,000. Up to the time we reached 105,000 it didn't interfere with our operations. At the time we finally opened the last gate, it was then open between 9 and 13 feet. Everything else at that time had been opened up gradually, and the last gate was opened between nine and thirteen feet. A little before midnight I ordered the last gate opened wide. I finally got it opened at 12:16 of the morning of the 22nd. At the time I ordered the last gate opened, the water in Lake Merwin back of the dam was still rising.

After they began to raise the last gate, and the last gate was raised and we shut down what we call the house machine,—a small machine to take care of our spillage and auxiliary apparatus, we had to go across the swinging bridge, and two of our men got washed down, that is, washed off their feet. Then as we left the swinging bridge we had to go through the tunnel which runs up through the dam, and our battery is situated up the hill, and we had to kill the battery lights, and after that the power house was dead. Immediately we started operation at the gates; send a man there [106] to take the readings of the water and the flow from that time on, and that is about the history of the night of the—the morning of the 22nd. That swinging bridge that we came across connects the transformer plat-

(Testimony of David J. Shore.)

form, the platform that the power house is built on, through the trust block in the tunnel. It is below the dam, and is suspended from one bank of the river to the transformer platform. As to how high above the base of the river that bridge was ordinarily,—it is I should say from elevation 75, that is the platform elevation, to elevation 50, whatever the tail-race level is. That would be approximately 25 feet. It is pretty hard for me to answer how close to the water the extension bridge that we came across was because the current coming down that platform was driving timbers and loading tongs and was shooting out on to the swinging bridge, and in the dark I wouldn't want to say just how many feet it was. There were seven men there; we had to hold on, take ahold of hands till we got a hold on the railings on the bridge, and then we got across.

(Re-Direct Examination by Mr. Lord)

I said that the largest flow of water that I had ever seen go in the spillway of the dam was on the 10th. That was caused from the stream flow. As I recollect, the reading I gave was 61,000 second feet, the highest.

This book, these sheets (defendant's exhibit A-2), shows the elevation of the water in the dam each day; the elevation of the water does not show in this book. We take these sheets at the station for 24 hours, and we have a duplicate copy at the plant. This original copy is sent to the office every morn-

(Testimony of David J. Shore.)

ing. They are just loose sheets. We put a carbon copy between this one and a yellow one; send this white one to the office.

When 61,000 second feet was going through the spillways and gates, the elevation of the water in the dam was not being lowered. As to whether it was being maintained at 237 feet, I can't say offhand what the elevation was. It was being maintained at our normal flow, or probably a foot above, [107] but it was being maintained at a certain level; nothing any more than on a normal head, which is elevation 235. I let it go up to 237 on the 21st. As to whether I could have let it out before then,—well, if I could outguess the elements, I probably could have. It was just a case of opening the gates. We could open the gates, but our normal head is 235; that is our working head, the head that we bought the machines for. As to whether we could have maintained it at 235 right along if we had wanted to, if we had opened the gates up,—we could not have on the night of the 21st. We never at any other time had all the gates wide open. The increase from 235 to 237 occurred practically the last two days. During that period of time we could have let the water out by opening up the gates; but I didn't. That was a matter of my decision.

I saw it was raining hard between the 10th of December and—; I knew it was raining hard. The storm was on all over the Northwest, and it kept

(Testimony of David J. Shore.)

coming down in torrents. There was considerable discussion with the public that a flood was about to be on. As to whether during that period of time I called up the Portland office and asked for instructions,—well, we have our instructions of normal water, which I told you; that elevation varies from that. We keep in contact with the load dispatcher and report our water. We do that every hour. As to whether any time between the 10th and the 21st I called up the Portland office for instructions as to what to do,—well, I couldn't just exactly state that. A fellow would have to have some memory in talking to the office for a month, and didn't ask for instructions in charge of a plant. I don't remember whether I did or didn't.

On the 20th I decided to raise the water up to 236; that was a foot. I told them to bring it up a foot. I gave those instructions to one of the operators at the power house. That foot was done on my own responsibility. I did not raise that foot upon the advice of anybody else. I did not raise the water elevation in the lake any higher upon the advice of anybody. I was on the spot. The telephone communication was off, and it was left absolutely to me. As to whether I still continued to raise it higher then; when I say [108] I was on the spot, the stream flow kept coming up even though I did open them all. It was coming up to the point of the last gate. It did not at any time go over the coping of the dam. As to whether there ever was a time when

(Testimony of David J. Shore.)

we couldn't get out on that walkway along the dam,—we weren't on no walkway on the dam; that was below the dam. The walkway on the dam is where we took the readings after 12:16.

We didn't close any gates to raise the water a foot; we just didn't open a gate, and let the water come up. We didn't continue to open No. 5 gate, and let the water in the pond raise a foot. As the water increased, we afterwards raised No. 5 gate.

The capacity of the big gates is about 30,000 second feet apiece; the little one, about 7. I saw the water passing through the gates with my own eyes. At elevation 237, when the five gates were all open, they were going clear full.

I referred to the conditions in Woodland. I was considering the flood conditions there, from what I saw and what I heard. I had not been considering those matters for several days prior to the 20th, nor till it had reached a peak higher than we ever had before it. It reached a peak on the 10th of December, 1933. That was the first time that I began to observe conditions in Woodland; that was when we was anxious about it. When anything happens that is above normal operation, the operators are naturally anxious about what is happening. At that time we had gates open enough to spill that stream flow; equivalent to that stream flow of 61,000 second feet. We thought of Woodland at that time. I did not go to Woodland at that time to see what was happening down there, but we got reports from Woodland

(Testimony of David J. Shore.)
at that time. The reports came from people living in Woodland. If the water remained at 61, why, there wouldn't be any danger in Woodland. I don't just remember just who was giving me these reports. There was plenty of people calling up, asking us water conditions, at all times,—what we think of the rain, and whether we [109] are going to have more spill, or what have you.

As to whether I recall a man by the name of Mr. Button, he is the banker there in Woodland. Button called me up, asking me what the chances were for more water, and what I thought about the weather; yes. I don't recollect whether he asked me what the chances were for letting out a lot of water in the lake because people were getting apprehensive down below that the dam would go out with the full head on. He did not tell me that the people down at Woodland were beginning to get scared with the way that the water was accumulating in the pond and that they wanted me to let it out. He asked me if—in my opinion what the conditions were; what I thought about the rain and conditions. There was a lot of people called up about the water in fear that the dam was going to go out, but I couldn't operate on those conditions. If I paid attention to anybody that that dam was going to go out, why, we couldn't operate, that is all. They have been more or less panicky about the dam going out since they installed it, to the expense that they put in a siren to give a certain ring if the dam went out. That

(Testimony of David J. Shore.)

happened long before the flood; shortly after the construction was finished. I can't give you an idea of the date upon which the people first began to show they were panicky about the condition of the water in the Lewis River, because as the floods from our spills increase from one spill to another, until they become acquainted with the river, they talked about any freshet. It is correct that I stated here on my cross-examination that in my raising the height of the water in the dam, I had these people below in mind; I meant the people in Woodland; those were the ones I was in touch with. As to whether I was referring to Mr. or Mrs. Grieger,—it meant the same thing to me. It was the people below the power house. The agitation that was on, or the evidence of panic that I saw, was from people in Woodland, twelve miles away.

I remember that I spoke about going down to the fire house; the fire house was practically right on the bank of the Lewis River. At that time the water was not out of the banks of the Lewis River. At the same time we [110] were still keeping a head of 235 feet elevation in the pond. As to whether the reason for impounding the water was not because I had the people in mind but because I had the safety of the dam in mind,—you could run the water twenty foot over the top of that dam, and that dam would still be there. The safety factor of that dam is so far above the actual pressure of the water up to 235, that it is about 5 to 1.

(Testimony of David J. Shore.)

As to the two roadways along the dam,—the Cowlitz roadway going to the dam ended at the bridge. We then crossed the bridge to the Clark County side and a short piece of roadway from the bridge leading down to the plant. The water came down that short piece of roadway on the Clark County side of the bridge. It was not coming from the pond at all. If the pond overflowed it could come over the dam down that way. As to whether that was the water that was drowning us out, or as to whether it was the water coming down the spillway,—well, that was the water that was coming down the spillway. As the spill got higher, it splashed up over the road, it was the water from the spillway that ran down that road; the spillway is on the Cowlitz side. The water hit the bank on an angle from the spillway, and the waves would come up, and this water coming down the road just came in surges; it was not constant. The water backed up from this, in this gorge, and flooded us out. What drowned us out as far as our power plant was concerned, was the combination of the water backing up the gorge and a portion of the water from the Cowlitz spillway coming across and striking the bank, and then coming back; it does not come across. There is an angle in there, and it curves; the way the spillway was made, and the way the gates is operated, has a tendency to make most of that go pretty straight past

(Testimony of David J. Shore.)

that rock point you are talking about. What drowned the plant out was the water from the spillway splashing over that road where the bridge was.

I said that the gates could be closed by hand. We did not close them by hand on the night of the 21st. We had, as I said, the house machine running until we opened that last gate. Eventually the gates were all open. [111] We closed them at 2 o'clock the next afternoon. I do not recollect what the elevation of the water was at the time we closed them; I can find out. At that time the elevation was 235.07. We started to close them at 2 P.M. on Friday. We did not try to close the gates by hand. The reason we did not try to close the gates by hand was because under the weather conditions, the amount of rain we was having and from past experience, I did not think it was advisable. Every indication was that we may have more water. It is absolutely not a fact that we could not close the gates by hand.

We did not have a crew of The Portland Electric Power—; we had our own crew up there.

As to how we closed the gates on the 22nd, on Friday, starting at 2 o'clock, this chart shows No. 1, 2, 3 and 4 up 26 feet; No. 5 up 15 feet; that was midnight. We did not start to close them until the next day at two; that is Friday afternoon, after the peak, we started to close the gates. As to how the gates were shut off, I don't get all the readings here though. This is at midnight. We started to close the gates at 2:00. You want readings at each closing, all the way down. Now these notes

(Testimony of David J. Shore.)

were taken while we were operating on top of the dam during the time from the peak of the flood until 2:00 P.M. that we started to lower the gates. When I say that we were on top of the dam, I mean where the gates are, the mechanism for operating the gates; and at 2 o'clock P.M. the elevation was 234.90, and gates 1, 2, 3 and 4, were then open 26 feet and No. 5 was open 20 feet. That would let a spill of about 112,600 second feet go through the gates. At 3:00 the elevation was 234.95. The spillage was practically the same, and gates 1, 2, 3 and 4, were opened 26 feet and No. 5 was open 20½. That reading was 3 o'clock. This reading says that at 3 o'clock the spill was 112,600. At four o'clock the elevation was 234.75; the spilling was the same and the gates were the same. At 5 o'clock the elevation was 234.60; spilling 112,600 second feet and the gates were the same. At 6 o'clock the elevation was 234.50, spilling 112,600 second feet, and the gates were the same. At 2 P.M., we had the power [112] to change the gates. As to when we began to close down the gates, well, at 8:30 is the reading of the first gate partially closed. At 8:00 P.M.; elevation 234.05, spilling 101,000 second feet; gates 1, 2, 3, 4 open 26; No. 5 open 14. It was 20 on the last one. That reading was a half hour reading on account of the change in the gates; that was 8:30, the last one I gave you, and at 9 o'clock elevation 234 even; spilling 101,000, and 1, 2, 3 and 4 open 26½; No.

(Testimony of David J. Shore.)

5 open 14½. At 10 o'clock: elevation 233.85; spilling 101,000, and the gates were the same. At 11 o'clock: elevation 233.70; spilling 92,700; gates 1, 2, 3 and 4 open 26; No. 5 open 8½. At 12, midnight: elevation 233.60, spilling 92,700. At 1 o'clock: elevation 233.5, spilling 92.000, gates 1, 2, 3 and 4 open 26½; No. 5 open 8½.

The spillway was estimated by the area of the gates, the size of the gates. The maximum spillage at 11:15 A.M. on the 22nd was between 127,000 and 30,000. Say 130,000. We have a record that is here. I have got it here at 12:15 on the 22nd,—10.516 acre feet. I don't like to figure how you convert that into second feet; the engineers can figure that. It shows in my log book as spilling 100,000 at 11 P.M., and it is in that small sheet I just read you out of. It is a fact that immediately after the opening of all of the gates, the elevation of the water in the pond began to decrease or fall something like from 237.6 to 233.5 in a twenty-four hour period; I don't just recollect the figures, but it dropped.

(Re-Cross Examination by Mr. Evans)

The figure that you call my attention to in my log book shows 127.200 feet at the peak, at 12:16. Before I decided to let the water rise that extra foot on the night of the 20th, I had a conference with someone at Woodland; it was the Mayor of Woodland. Fred Brandt, the manager of the telephone company, was also there.

(Testimony of David J. Shore.)

The peak of the flood was at midnight on the 21st. Up to midnight on the 21st, on that day, we stored between five and six thousand second feet. If we had turned that loose according to stream flow, the peak of the flood [113] at midnight would have been greater than it was.

Thereupon

LYMAN GRISWALD,

a witness for plaintiff, being first duly sworn, testified as follows:

(Direct Examination by Mr. Lord)

My name is Lyman Griswald; I reside at Portland, Oregon. I have lived there twenty-five years; I am a civil engineer; I take general employment, independently of any single employment. I have been employed both by the Northwestern Electric Company and by Inland Power & Light Company.

As to whether I had anything to do with the construction and the formation of the plans for the completed project known as the Ariel dam,—well, I located the Ariel dam in 1921, and I made or constructed or directed the making of all of the investigations on the Lewis River, up to the time of the beginning of the construction, which was about November 1st, 1929. I did all of that work for the Northwestern Electric Company. I cannot tell you exactly when the Inland Power & Light Com-

(Testimony of Lyman Griswald.)

pany came in on it; it was sometime in the early part of 1930, after the construction of Ariel started, that I got the instructions to charge the Inland Power & Light for my services. I would not say that I had access at all times to the records that were made prior to the dam, that is, the observations that I took; they are not in my possession now. I suppose I could go to the Northwestern and secure the plans.

The storage capacity of the Ariel dam is about 400,000 acre feet; I do not remember definitely, but about 400,000 acre feet. The lake itself is 12½ miles long; at its widest point it is about a mile and a quarter. It has numerous arms or branches that go out and come back; in general, short ones. Lake Merwin covers not quite four thousand acres, around thirty-nine hundred at elevation 235. I have no record of the average depth of the lake. I know the maximum depth in feet of the lake. If the bottom of the river is where it was when I saw it last, back of the dam, it is a hundred and ninety-five feet deep when the water is at elevation 235. [114]

I was identified with the company engaged in the construction of the dam. It was under the direct charge of Mr. Lincoln, who was the construction manager. Mr. Lincoln is dead. As to who was next in authority in the construction of the work, speaking from the engineering supervision that would be exercised by the owners over the plant, I guess Mr. West, locally, and Mr. Merwin, vice

(Testimony of Lyman Griswald.)

president and general manager of the Northwestern Electric Company, was superior to Mr. Lincoln. Mr. West is located in New York, as far as I know. The plans and specifications were made in New York; they were not designed by me. They were designed by the engineering department of the Electric Bond and Share Company. I was on the job as the consulting engineer for the owner, the Inland Power & Light Company. I don't think it is a fact that the original plans and specifications called for a different location of the power house. As to whether it was taken into consideration in the designing and the construction of the dam and the plant, that the power house might be drowned out or flooded out upon the location upon which it was placed,—it was not considered probable at all.

(Cross-Examination by Mr. Evans)

I testified this morning in my examination in chief that I made the investigation of the watershed and the river there to determine the feasibiilty of this project. I would say I put in half of the time between 1921 and 1929 in investigating the conditions of the Lewis River before the dam was located. As to what I did in making that investigation,—I had numerous survey parties in the field; I established recording stations at different points, and I personally investigated the river for any features that might be of interest. I examined the history of the river as to past floods and freshets,

(Testimony of Lyman Griswald.)

in so far as I was able to. I examined into the rainfall and the extent of the watersheds. I examined into the flood flow of the river with a view to determining what had been the historical peak flood of the river, and ascertained that the peak of the largest flood known, and recorded, occurred in December, 1917, was about 60,000 second feet, measured at Amboy. The flow at Ariel is roughly ten per cent bigger than that of Amboy. [115] From my entire investigation the peak flow of the river at Ariel would be 66,000. In drawing the plans and in constructing the plant, they actually made the capacity of the gates, through which they could spill water, about 130,000 second feet; roughly twice the biggest flood we knew. It is common practice among engineers to provide spillways double the capacity of the highest flood known.

(Re-direct Examination by Mr. Lord)

I got my information about the 1917 flood from the U. S. Geological Survey; that is what I call a recorded flood. That was not the only source of my information. I talked with settlers in the valley, and I examined log drifts and high water marks. The best evidence I could find were the log drifts. I considered all those factors; I considered every factor that could enter into it. I found the log drifts along the river.

As to what settlers I talked to,—I talked with Ole Peterson; he lives not quite at the end of the

(Testimony of Lyman Griswald.)

road. He is up near Swift Creek, about two miles above the road. I talked with Fred Schroeder, who is now Mayor of Woodland. At that time he lived up near Cougar Creek, a few miles above Ariel. I did not buy any land from him in connection with this dam, so far as I know. I talked with a man named Albert Haller, who owned some of the property that now is in the reservoir. I talked with Mr. Hanley, who maintained the Amboy gauge for a number of years; with a man named Wall, a timber cruiser and logger, with whom I had had extensive dealings; also with a man named Frank Reid, who was born and reared on Cedar Creek, which flows into the Lewis River about three or four miles below Ariel. I talked, no doubt, with others who I don't remember now, of course. I didn't make records of those. I did not talk to Mr. Thiel, who lives below Woodland. I don't know him; I don't think so, I don't recall the name. I am pretty sure that I don't know him. As to whether I talked to any of the old ranchers along the river, or men who have lived on the river since the pioneer settlements, say in the fifties,—yes; Frank Reid is a man who must now be in the sixties. [116] He was born there on Cedar Creek, and has spent a good part of his life logging on the Lewis River. Loggers frequently log during freshets in this land; they depend on freshets to carry the logs out very often. I did not find out anything about the flood of '64; I don't re-

(Testimony of Lyman Griswald.)

member a talk with anybody what knew about that flood. I don't think I could name offhand the big floods that this country has had since the 60's. I have a record of them in the office, but I don't recall them now. I considered it from the evidence that I found. I considered that 1917 flood the highest in the modern history of the river. I heard about the flood of 1894. So far as I could find it was not as high as the flood of '17. The investigations I mentioned determined that. I made no special investigation as to the flood of 1896.

The Lewis River drains an area of about 750 square miles above Ariel; that includes some mountain peaks. It gets about one-sixth of the ice cap of Mount Adams, and about half of that of St. Helens. I doubt if it is a fact that the greater portion of the water comes from Mount Adams; I think most of it comes from St. Helens. I couldn't say off hand how far away Mount Adams is from Ariel dam by the river; I suppose it could be measured. If I had a map it could be done all right. This map, which you hand me, marked plaintiffs' exhibit No. 16 for identification, I never saw before, but it looks like a very fine map. It shows the course of the Lewis River. This map is put out by the Director of Highways, of the State of Washington, Mr. Murrow. I don't know how it is pronounced. I find Mt. Adams on that map. I do not have a rule by which I could measure off the distance be-

(Testimony of Lyman Griswald.)

tween Mt. Adams and Ariel dam, but it is roughly 60 miles. This river is shown rather direct on here, but it is roughly 60 or 70 miles above the Ariel dam. Muddy River is the largest stream flowing onto the Lewis River from Mt. St. Helens, and Pine Creek is a smaller stream that flows in above the Ariel dam.

(Thereupon, plaintiffs' Exhibit 16 for identification, a map of the Lewis River drainage area, was admitted in evidence and marked Plaintiffs' Exhibit 16.) [117]

Thereupon

DICK DAVIS,

a witness for the plaintiffs, being first duly sworn, testified as follows:

(Direct Examination by Mr. Lord)

I reside four miles below the Ariel dam. I have lived in this district 42 years. I have been living four miles below the Ariel dam and a mile or a half mile back off of the road. I work for the State Fish Hatchery there. I was subpoenaed to come here as a witness. I was living there in December, 1933. I had occasion to observe the height of the water in the Lewis River a day or so before the big flood. I couldn't describe the height of the water. It was high; it was high water. I would say that the water was below the roadway on the 20th; the road-

(Testimony of Dick Davis.)

way runs along the banks of the river. It had been raining pretty hard before the 20th. I couldn't say how long the rain had been keeping up; it had rained for several days. The weather was warm for that time of year. Where I was, I believe it was warm enough to melt snow. The roadway parallels the river at that point. When the water was at the ordinary stage I would say it was 6 or 8 feet from the top of the water to the top of the bank. The water was pretty well up on the 20th. It was not in the road; I don't know just how close it was. I saw it the next day, the 21st, at 7:30 in the morning. It was then over the road. I don't know how much; I would say six or seven feet. I don't know as I observed any floatage in the river on the 20th. On the 21st, there was drift running.

(Cross-Examination by Mr. Evans)

It was at 7:30 in the morning on the 21st that the river was six to seven feet over the road; it did not wash the road out. Drift was coming down the river on the 21st. I couldn't say exactly what that drift was; there was three cottonwood trees that grow along the bank; I suppose they had been washed out on the 21st. I could not say as to whether that condition prevailed pretty much all of that day. I was at the fish hatchery till probably noon, I guess; I don't remember exactly. We went down the river at noon. I could not say as to whether I observed drift in the river all the way

(Testimony of Dick Davis.)

down as I [118] went along; we were following a house that floated away, trying to catch it. Before it floated away, that house was setting on the lower ground next to the road, in the vicinity of the fish hatchery. I would say that we followed it a mile. We followed probably to about a mile above the Grieger property. As to whether in following this house we were along abreast of it,—we saw it only a couple of times; we were in a car going down the road, but it was in the river. I couldn't say whether there were trees floating in the river whenever we saw it; there was driftwood, I believe. We did see cotton wood trees up by the fish hatchery that had very apparently washed out that day. The river was cutting into the banks.

Thereupon

FAY M. GRIEGER,

one of the plaintiffs, called as a witness on behalf of the plaintiffs, being first duly sworn, testified as follows:

(Direct-Examination by Mr. Lord)

I am one of the plaintiffs in this case. I am a dairyman; I have followed that occupation for 15 years. Before that I handled cows some as a young fellow on the farm, and then later on I lived in the city, and in 1920 I went back to dairying. There was a period of time that I was in the army; that

(Testimony of Fay M. Grieger.)

was before I bought this place in November, 1920. I had not lived in that community before 1920. I was born and raised in Missouri, up until the time before I was in the army, a little while before I came to the Coast, and I lived on the Coast from 1918 to the present day. I went into dairying in 1920, when we moved on that place there, and I have been living on the place on Lewis River ever since.

As to how many acres the place holds,—we had a deed to 101 acres. There were 101 acres on the place, and more. I have lived there ever since. My wife and I own it. There are two residence houses. When we went on to the place there was one farm house that stands practically on the southeast corner, that is, a little east and a little south of the boundary line there; and then later on I built a residence for myself about a thousand feet west [119] of that; that was built in 1931. My answer as to the location of the first house was an error; it should have been north and west. The house was on my property. It was an old farm house at that time, and later on we raised it and put a concrete basement under it; it has been occupied ever since. The new house is built on my property, and I am occupying that now. My father lives in the other house. My mother died a little over a year ago, and my folks lived there to that time, and my father has lived there since.

(Testimony of Fay M. Grieger.)

As to whether the buildings have anything to do with the size of the place,—yes; we was running the dairy plant at that time, selling market milk to Portland, and the inspection there requires that we have certain specifications in our barn; that is, we must have concrete gutters, runways back of them, and they must come up to certain specifications; that is, we must build a milk house to handle our milk in cooling it, and to take care of our milking equipment; and in 1930 I built a new barn where the old barn stood; that barn is 47 by 80. It will hold in the neighborhood of 40 cows. The loft will hold in the neighborhood of 120 ton of hay. When we first moved on to the place, I bought hay for a year or two; and after we were on the place I cleared more land and we always got our hay from that place, then. When we went on the place I think we stocked it with fifteen or twenty cows, and from then on I increased it up to the time of the flood we had in the neighborhood of 42 head of cows. Under the conditions then it would not run any more cows than that; it was running about all we could handle at that time. The barn was built to accommodate that number of cows.

There are other buildings on the place; there is another small barn, that I built to keep the horses in and the young stock. The city milk inspection in Portland requires that if you keep your horses in the cow barn they must either be boarded off solid

(Testimony of Fay M. Grieger.)

from the cows, or else keep them in a separate place; so we built this special barn for the young stock and the horses; and then we have two chicken houses,—one chicken house is 100 by 24 and the other is 100 by 24. We have other small buildings there, such as feed [120] house, calf house, and a couple of small brooder houses, and one bunk house where the hired help stay at times. The buildings on the place were designed for a place of 101 acres, and they carry maybe a little more stock than we were carrying.

With reference to our place, the Lewis River flowed on the east boundary, or the boundary line run from the county road back to the river on the north, and the river there runs northwest, and on the northwest corner it turned and come back down on the west side. The general course, right there, is northwest. During the period of time that I have lived there prior to Christmas, 1933, the river had not cut into the banks of my property.

As to the so-called jetty that has been described here,—well, if I could present this sketch that I made on wrapping paper I probably could explain a little bit about the thing they call a jetty, which is not a jetty; it is a sheer boom. I could not say exactly when it was put in, except that I have heard after I was there. It was there when I came on the place. As to whether or not at that point the water had cut into the land or had carried part of the top of the soil or anything that way,—that jetty is not

(Testimony of Fay M. Grieger.)

directly back of my place. That jetty sets—the farthest point downstream, which is out in the river, sets back of my neighbor's place. The jetty at the nearest point is approximately 150 feet above my line, the east boundary line.

I know the character of the soil on my property. As to whether I have become a soil expert,—well, I know soil when I see it. I know the kinds that grow and the kinds that do not grow vegetation. I know what is known as sandy loam, and silt loam, and such types of soil like beaver dam and clay and red shot. The soil on my place is what is known as a silty loam. There was some portions on the bank of the place where there was some sand, but more of the place was composed of silty loam.

I judged the reasonable market value of such land as mine with [121] the buildings on it in the year 1933 was in the neighborhood of $22,000. I know the value of other lands in the neighborhood of the same kind, by the acre, regardless of buildings. Some of that land was valued around $200.00.

The land down on the other side of the railroad tracks four miles away is the same texture as my land; the only difference would be that it is a little closer to the Pacific Highway than I am; probably two miles. It has a gravel road by it, and there is a gravel road by our place.

In the early part of December, 1933, I was home on the place, I was down near the river off and on

(Testimony of Fay M. Grieger.)

all of the time during the month of December. As to what would take me down there,—well, we got our cows, and I went along the river bank practically every day, going to town and back. I observed the condition of the weather in regard to moisture. It was raining quite a lot during that time; sometimes it would rain quite heavy. The temperature was very warm for that time of the year; it was warm enough to melt the snow on the high places; there was no snow that could be seen on the high hills there. I observed the condition of the height of the river along about the 10th of the month. The river at that time was fairly high, and some water had backed in over my place at one time. It did not stay there but a little while at that time, and it went over the road on one place down about three and a half miles down the road. As to whether its height increased from day to day along up until the 20th of the month,—well, that was the only high water we had between those dates. It kept on raining between the 10th and 20th; it rained quite a lot then and was warm, and there was hardly any water coming down the river at all then. I noticed the condition of the river on the 19th. On the 18th the water was down. It had not come up very much then. On the 19th the water had raised quite a little, and it went over the road in a couple of places; and then it dropped back down some. It went over the county road one place about a half a mile from Woodland, and the other place was

(Testimony of Fay M. Grieger.)

around a mile and a half below me towards Woodland on the Clark [122] County side. On the 19th it was up. On the 20th it was about the same height, and on the 21st it came up quite a lot on that day. I observed it first in the morning; it was up further than it had been any time during that week.

Up until the 21st the current had been running out in the channel more. There was some water over part of the ground at that time, but the current was way out in the channel of the river. Prior to the 20th it was not cutting away any of my land. I did not at any time observe the current cutting away any of my land up to the 21st; I noticed it on the 22nd. We stood on the hill above the water, and we could see it taking the trees which was down on the northeast corner. It would take out trees right along there. Then farther up we could see some of the soil going there. It was warm there. I saw the waters subside on Friday; on Friday afternoon it dropped some, from practically 2 or 3 o'clock it dropped quite a little. I saw it wash practically two channels through the land at that time; you couldn't see clearly then yet. Until Saturday we couldn't tell much about it, but as the water went down further, then we could see the extent of the wash that it had made there. It subsequently dried off. Where we had our farm land, and which had been fenced in by woven wire fence, we found that we had no soil at all. It was washed clear to the gravel in there, and up further to the

(Testimony of Fay M. Grieger.)

south it had cut or washed out chasms at two or three different places there. It hadn't washed quite as deep there, but in different places it cut up the land quite a lot there.

These pictures handed me, which are marked plaintiffs' Exhibit 1 to 7, were taken on my property. I saw them taken. I was down there when they were taken; in fact I am in three of the pictures. The man standing along the bank in three of these pictures is myself. Prior to the flood the condition of the soil where I am standing was level soil. When the river was at normal flow I would judge it was 10 or 11 feet above the river. Now it is probably a foot, or a foot and a half, above the river. If the water comes [123] up any at all it will use it as a channel. The soil in there was silty loam; the best soil I had. I haven't found anything that anyone would now recommend raising on it. That is the place where it is worn down clear to the gravel. Driftwood was throwed up all over the place there. In one drift pile we counted 21 trees; they were all sizes anywhere from four inches up to a foot and a half through. There were three or four big cottonwood trees washed in there. Three of them is still on the place there. One was washed up on top of two apple trees there, and was resting there after the flood, and two of them are laying up on a big sand pile there. There is some stumps washed in there also. Sand was washed in all over the place. Some of the piles of sand is as deep as

(Testimony of Fay M. Grieger.)

five and six feet high; anywhere from six inches up to six feet; most of it is a coarse sand. Once in a while you will find a little finer sand with no silt or anything in it. It is not capable of producing anything. It is a detriment to the soil because you can't raise anything on it. It has the soil covered up, and stuff couldn't grow through it at all.

Approximately around 45 acres of my land was washed away, and I would judge in the neighborhood of 30 or 35 acres of it was covered with sand. As to whether that that has the sand on is used for any purpose,—the cows run over it once in a while, but nothing will grow on it.

There wasn't any side of fences left. We found part of the woven wire fence, maybe two hundred feet of it, piled up in the driftwood. We couldn't ever find any of the rest of the woven wire fence at all, and we found maybe one or two of the barbed wires and the cross fences. I had just finished the woven wire fence in June before the flood; there was around 120 rods of it. They were new posts; we put new cedar posts in the whole fence. A cedar post is supposed to be the best type outside of steel posts. We figure the cost of putting in the fence, and the material, and everything in the amount of about $450.00. [124]

We had oats and vetch at that time, for hay, that we would have harvested the next year, and we had a small crop of clover on the place; there was in the neighborhood of 34 or 35 acres. The reasonable

(Testimony of Fay M. Grieger.)

value of the crop would be in the neighborhood of $800 or $900 when it was harvested. There was some timber on the premises; some fir and some cedar, and here and there was cottonwood scattered through, small trees, a lot of it washed out there. The reasonable value of the timber that I lost was in the neighborhood of $200.00.

Exhibit No. 17 for identification, which you hand me, I recognize as one that was taken under my direction. That depicts the type of sand that is on the place. That sand washed in there during the night of the 21st and the day of the 22nd.

(Thereupon Exhibit No. 17 for identification, a picture showing sand on plaintiffs' premises, was admitted in evidence, and marked Plaintiffs' Exhibit 17.)

Exhibit 17 was not taken on the part of my land that was washed away; that is some of the land with the sand piled on it. Right in back of that mound, right back of me, is a pile of sand. There is a log and a stump laying right there where I am standing; that is sand.

I have prepared a sort of sketch of my place; it shows the section where it was damaged,—well it shows the whole—I made a sketch of the whole place from the county road back to the river. It shows an outline of the land, and I tried to show where the ground was washed out there. I will try to show the way my place lays with reference to the river.

(Testimony of Fay M. Grieger.)

The sketch shows the turn of the river and the channel of the river before the flood. It shows the lands that have been cut into. This map isn't drawn to scale; it is a sketch. The boundaries of the land is defined there. I didn't have any survey or any measurements made as to the actual quantity of land washed over; I didn't have the means and so forth to make that. I [125] think your company has one that they have made.

(Thereupon Plaintiffs' Exhibit 18 for identification, a sketch of plaintiffs' land, was admitted for illustrative purposes only, and was marked Plaintiffs' Exhibit 18.)

Referring to this sketch, the county road is on the south here. The county road runs, comes from this way (indicating). This is going towards Woodland, and it makes a turn here and goes down west. Down this way it makes another curve and goes up towards Woodland then. This is on the Clark County side. This piece of land lays on the Clark County side. The Lewis River is the dividing line between the two counties. What land lays on the south of the Lewis River is in Clark County, and that on the north is in Cowlitz County; we, being on the south side of the river, are in Clark County, so this road here is in Clark County. There is another road on the Cowlitz County side that runs along the Lewis River approximately there (indicating). All of my lands lays on the Clark County side; I show no land on the Cowlitz County side of

(Testimony of Fay M. Grieger.)

the river. The river, as I said, comes here and flows northwest. This land in here was originally a donation land claim from the government. It was made to the people that settled there; there was 140 acres in it originally. My land is approximately 1300 feet from the east to the west boundaries. Down in here it angles out, and it is further across here (indicating). I never made any estimate of that distance down in there, how much further that is. The other way the distance is around 120 rods (indicating). I should judge the river travels clear around in front of my land in the neighborhood of three-quarters of a mile. The river runs down this way, and it comes to this point here and goes down this way (indicating)—curves back and goes down this way (indicating)—, where the red and the black line are together.

The water cut off the back end of the place next to me, and come across the corner here, and cut here (indicating), these marks made here with [126] the pencil, or where the river cut clear to the gravel, this space through here, practically (indicating). This space in here that I made blue is sand piles here. Up this way further is where it had cut out chasms. There is no gravel in here except in a few places where there is an outcropping of gravel where it is real deep. The other places it has not cut through the gravel there. When I speak about a chasm, well—you go here, and there is a big hole, quite wide and long in places, and then other places

(Testimony of Fay M. Grieger.)

there will be smaller holes, and they will be different sizes there. There is one long one here I have shown, and there is another one over here, and I think in here is one (indicating). I haven't shown all of them; these are around four and five deep here. This one over here varies from three feet. The timber that I referred to laid down in here. There is some timber left in this space here yet (indicating).

The houses are indicated by those square marks. This house here is a house that we originally owned. This house was raised and we put a concrete base under that. That is the house we live in, which we built later on. This is where the dairy barn stands, and I haven't shown here the little milk house which I spoke of. One chicken house lays this way from the barn, and the other one this way. That would be best. And the small barn that I spoke of for the horses, and young stock, lays down this way, and the bunkhouse for the men is in here. Then the smaller buildings, like the calf house, I haven't shown. That is shown approximately here on Plaintiffs' Exhibit No. 5 at the point I have marked No. 5 on the map.

Exhibit No. 3 was taken a little further down towards the river. You will notice the pool of water standing here; this comes under the drainage from the river. The river raises and lowers, and this little pond here will raise and lower. That picture was taken the 28th day of September, this year.

(Testimony of Fay M. Grieger.)

Plaintiffs' Exhibit No. 2 is not illustrated on my map. This was [127] taken over here in this district, and was taken from the timber which I said was still standing down in here (indicating). This shows the timber down along in here. I will mark this on this map "2". Before the flood there was tillable land covering those rocks that are shown in the picture; in fact it was part of the field that was fenced. Those rocks shown in exhibits 1 and 7 were brought upon the land because of the flood. At the ordinary stages of the water I should judge that that land was around 40 rods away from the water here. I have never found any value for these rock beds; I don't know what they would be valued for.

I know the reasonable market value of the place after the flood. It is just a place to live. I don't know that you would get anybody to buy it. I wouldn't judge it would be worth over $1,000.00 or $2,000.00. About the only value you would get out of it would be in the lumber of the buildings.

(Cross-Examination by Mr. Evans)

I now have in the neighborhood of 30 head of cattle. I pasture them on three places, on Ross island and part of Jim Ross's place. I imagine there is in the neighborhood of 110 or 120 acres on Ross Island. Part of it is owned by Jim Ross, and part of it by me. Part of the soil is silt, and some of it

(Testimony of Fay M. Grieger.)

sand. Maybe 10 or 15 acres is silt soil. I own 66 acres of that. I bought it in May of this year, and paid $1,000.00 for 66 acres. I said maybe 10 or 15 acres of it is silt and loam. I contracted for another little piece so that I could get across to the other; that adjoins my present land on the west. The soil of that is sandy. I don't think that there is any silt on that place, and no pasture. The cattle run over it, and there is no pasture of any value on it. I bought it to get across to my place over there. I paid $550.00 for it. The acreage of that is 22½, I think; 22.

That place is an old donation land claim. I am somewhat familiar with the history of the place from others. My deed calls for 100.6 acres. This map doesn't purport to be confined to the 100.6 acres. I think in a [128] short time I can draw in with a pencil the 100.6 acres that I described in my complaint. I will mark that line "A" at one end and "B" at the other. This line here should come over in here a little. It washed out over there. In here is the wash I am talking about (indicating). I have not had that measured at all. This map does not purport to show the proportion of the ground that was washed over. I stepped off the acreage so that I could figure it; I did not measure it at all; I did not have any steel tape. I figured out the acreage with pencil and paper, but only from a step off. I am including damage to this land below the line; it is covered with sand, too, down here.

That is not included in my description of the land in the complaint. There is quite a gravel bar there north of the line "A" and "B", there are approximately fifteen or twenty acres north of the line, that is not in the call of the deed or in my complaint.

I do not know anything about the old channels of the Lewis River that used to cross my place; how would I know? Prior to the 1933 flood, I could not tell from observation of my place where the river had been in other channels. I do not know that in 1853 the channel curved around some part of the land that was washed out; I never heard of that, and had no idea of it. It never occurred to me that where the wash occurred, down to the boulders, was an old river bed; I never thought of that at all.

On the 19th of December, Tuesday, I was home part of the time and was to town in the morning. I did not measure how high the water got up that day above the regular flow of the river there at low periods; it was high. It was high again on the 20th, about the same as the day before; it went out of its banks on Thursday, some. It did not go out of its banks on Wednesday at all; there was some water on the place, but the water that was there backed in from the west side.

The jetty was about 150 feet upstream. Before the flood the soil between my land and the jetty was gravel; there was no washout in there at [129] all. There was a sort of inlet there, that was always in there from the time I came; it is a low place all

(Testimony of W. J. Roberts.)

along the bank there; that was all gravel in there clear up to the bank of my place. The gravel was in the neighborhood of eight or ten feet lower than my place. That is not the place that the river would come in first; it would come in on the west side; I marked it on that sketch. This is not a jetty; this is a sheer boom. The east boundary line is down here, and the sheer boom is right here; it is marked with dots, and I have an arrow pointing up to it. With reference to it, my line is right here. The gravel strip that leads from the sheer boom down to my line is right in here where I have marked with a pencil. The gravel strip is all along here (indicating); that is all low here. When the river comes up it covers this. The river came in here first it always has; it backed in from over on the other side of the place. That is where it came in on the 20th.

The river had not got that far; it came up about here. The new channel or the cut of the wash that I am complaining about started back here by the sheer boom and then came out over my land; the wash started from the sheer boom over in here. The water did not come across on my property there at all from the sheer boom on the 20th; I don't think it did on the 10th. It might for a little while; not any time I seen. The water was not up very long on the 10th, and I was not back on that place on the 10th; I don't know whether the water went up there on the 10th or not. I didn't see it go through to my place in the vicinity of the sheer boom on

(Testimony of Fay M. Grieger.)

the 20th; I was not here; I was up in here (indicating). I did not see whether it went through there or not on the 20th; I would not know if I did not see it. As to how much of the 20th I was there,—it was just part of the time in the morning. I was there at chore time, and then I took the milk to town and came back. I was there in the afternoon or evening; not in the vicinity of the sheer boom. I do not know whether the water went across at the sheer boom, over to where my wash now is, in the afternoon or the evening of the 20th. If anything washed out that night I would have known it the next day. [130]

When I came out on the morning of the 21st, Thursday, the water in there was maybe five or six feet deep; I couldn't just say because down in here is just about as close as I could get to it; that is where I judged, somewhere in that neighborhood. Phillip's land is above me, immediately beyond the line here up river. There is a barbed wire fence around there. This flood went over quite a bit of that land; not all of it. That barbed wire fence would come to about that high (indicating approximately three feet). I was up there after the flood. The flood brought in grass and stuff which caught in the trees and on that barbed wire fence. As to how high the water got on that left-hand bank as you go down the river;—I did not come down that fence on the 20th. Since the flood the water shows on the top strip. I never paid any attention to whether it

(Testimony of Fay M. Grieger.)
would get on some of the bushes there. That is not a good deal higher than my land. Where the wash occurred on my land was not lower than the rest of the ground. As to whether there wasn't a slope there from there, right gradually down to the river, —the slope came down in here, clear back in here, the lowest place on my place, and that lowest place is still there. It came back towards this way, and there was another little low place come back through here. When I saw the current on my place it was running through here, from where the sheer boom was right at my place. There was drift found up there at that time; there was a log in here and there was another log as I said in those two trees there. There was no drift forming back above my place; I know there wasn't any there.

On Sunday, the 10th, a little water went through there from the sheer boom to my place a short time on that day. It came through from the sheer boom, in this way, because that was the way the current was coming, but it changed in this way first to permit this water to go this way, and then it went through; that was on Sunday, the 10th.

I was home part of the 21st. I went to town in the morning and I [131] was home before I went to town, and then I came back home again. I should judge I got back around noon. I was there the rest of the evening and that night. When I got back at noon the water was then fairly high across the place. I would not have any way of judging how high, as I had no sticks out there. The place where

(Testimony of Fay M. Grieger.)

the entire wash of my property is was not submerged from noon on the 21st; it reached that point some time Thursday night. As to how late I was up Thursday night,—in the neighborhood of 10:30. I did not stay up watching this flood at all. If I was not up I would not know how much wash and cutting there was on my property from 10 o'clock to midnight; I don't know. I would not know whether it washed some on the night of the 21st. I saw a lot of the wash occurring the next day, the next morning; I could not tell when I came out there whether a lot of stuff was already washed out. I could tell it was cutting, sure, in here and up through there; it cut practically all of the 22nd. All that day of the 22nd. When we first went down in the morning, it was a way higher than it was on the 21st, as soon as daylight that morning; I don't know exactly what time it was.

As to whether I know how high the water got on my place after 10 o'clock Thursday night up to midnight,—well, it was atop of the bank here when we got down here the next morning; it was up on there. It had been a little higher in that place, because you could see the drift right there. That was at daylight, Friday morning, around five o'clock, I imagine; it was not quite daylight. The river had been higher in the night; it went down some that day. The peak of the flood at my place was sometime during that night.

If the maximum flow of the water was turned

(Testimony of Fay M. Grieger.)

loose at 12:16, the peak of the flood would reach my place in a short time; the rate the current was flowing, it would probably reach there in about ten minutes or less, or a little more. I should judge my place is around seven or eight miles from the dam; it had to run seven or eight miles. The peak of the flood at my place was around 12:30 in the morning; the next morning the water was going [132] down a little.

I saw some drift in the river on the afternoon of Thursday; we saw big logs going down; it looked like an old cottonwood tree; it was a cottonwood log; it was not a tree. As to whether I saw just one, —well, there was one in particular; I watched it going down. I did not see anything that had the appearance of being washed out by this flood; not a thing. That log was floating out in the river channel; nothing was going across my place; not then. There was one log up on there where the wash occurred; there wasn't any swale there. The water was going through there some on Thursday; around three or four or five feet; probably somewhere in that neighborhood. As to whether I mean to tell the jury that with four or five feet going through there, that there wasn't any drift but one log,— well, that was all. I don't know anything about it from about 10:30 that night until 5 in the morning.

As to when the river started cutting my place,—I seen it cutting Friday. As to when it first started cutting,—Friday as far as I know. I don't know whether the cutting started at the peak of the flood

(Testimony of Fay M. Grieger.)

on Thursday night, or a little after midnight, or not. I didn't admit that the peak of the flood came shortly after midnight; you said that it—I don't know what you turned loose. I said that if the evidence shows that the most water was turned loose at 12:16 the morning of Thursday, the peak would reach there shortly thereafter. So far as I know that is the highest water that was there. It caused quite a lot of damage during that high period. The water cut all the time it was receding. I don't know whether it cut from coming up to the peak.

I had water in the plant at the barn for my stock; they generally always water at the river. Right off of the highest place there they went down there at the bottom; it was on the west side over there; they go down the hill to the water most of the time. At that time they wouldn't go down [133] to where this sheer boom was, before the flood. In the summer time they would water over on this side, because it was always the closest there, and they went down to the pasture that way. In the summer time they would sometimes go down in that neighborhood to the river where the wash occurred in the vicinity of the sheer boom; they could go down that bank, over the back end. There was a path around there at the back end.

That cottonwood was logged over on the west side there, on the back end there. I don't recall the exact date of that; that has been several years ago, after I got the place.

(Testimony of Fay M. Grieger.)

There was some current in the river across my place on Thursday where the wash occurred; a little. I said the water was somewhere in the vicinity of four or five feet deep. The water covered different widths wherever it would be. Down there at the low places it would cover it more on the west side than it would up on the other end there is some places lower, farther up then where the wash occurred.

This isn't a map; it is a sketch; it is not drawn to scale. The water came practically up this far (indicating); this is the lowest place through here, where I am marking with my pencil "C"-"D", where the water actually came to "C" at one end of the line and "D" at the other; that is the high water mark; the high water mark is up in there. The line "C"-"D" is probably eight feet higher than the wash; so that between the part of my ground which was washed and the point "C"-"D", the depth of the water was eight feet but that was the lowest place on the place there. The damage was all caused in this place where the water come across. The water at "C"-"D" was eight feet deep; I have no way of knowing how deep it was in there in the wash. Before the flood "C"-"D", at the highest point, was higher than the place where the wash is that isn't the highest point on the place; it is the highest point in the district. The distance from the line "C"-"D" down to the wash is approximately eight feet in elevation. As to whether

(Testimony of Fay M. Grieger.)

there is any damage above the line of the wash up to the line "C"-"D", [134] there would be some sand stuff in there. That isn't in that part that I have included in my pictures; there is a little sand there; it isn't shown above that, just a little sand here (indicating). There wasn't any wash up there at all. As to whether the part of my ground at the peak of the flood which was under eight feet of water was not damaged at all,—no, that lowest point in there was not damaged.

Thereupon

W. J. ROBERTS,

a witness for plaintiffs, being first duly sworn, testified as follows:

Direct Examination by Mr. Anderson

My name is W. J. Roberts; I live in Tacoma. I am a civil engineer, specializing in hydraulic engineering. I have been engaged in civil engineering more than 40 years. I am a graduate of the University of Oregon and then the Massachusetts Institute of Technology in Boston. I began engineering in Portland, Oregon, and followed it up by work in The Dalles, Oregon, and Hood River, Oregon, and from that I went up to Colfax, Washington. I was in Whitman County sixteen years, the first three years as city engineer of Colfax, and installing their first water system, and then I followed that with 13 years at the Washington State College at Pullman, and after that I went to Medford, Oregon, and put in a water system there. From 1908

(Testimony of W. J. Roberts.)

to 1913, I was in Olympia with the State Highway Commission, and from 1914 to 1923, inclusive, I was Chief Engineer of the Intercounty River Improvement between King and Pierce Counties; that is the reason they called it the Intercounty, and I was on that nine years. I received a letter in 1917, when the World War was on, to see if I would lay out the sewers and water systems for Camp Lewis, Fort Lewis, right out here 16 miles, and after that I had consulting engineer's work in many counties and cities and places in Oregon and Washington. Especially, I built the Centralia power project in 1929. I don't think I need to run over all that, it would just take time. I can give you the records, if you want them. At Washington State College I taught civil engineering and mathematics. [135]

I have been sitting in the court room all day and yesterday; the first, second, and third. I heard the testimony with reference to the elevation of Lake Merwin reaching a point of 237 feet, and dropping to the point of 233.6. From those figures, with the figures that were submitted for the area of the lake, and what it dropped, I am able to compute the amount of water in excess of the natural flow which was spilled there during that 24 hours: the testimony showed that the area of the lake was 4,000 acres, as I remember it. You multiply the drop by the acres, the average area of the acres in that drop, and as I remember it it was about,—I think it was 16,000 acre feet, assuming that the

(Testimony of W. J. Roberts.)

drop was about four feet. I worked out several problems of that character; that is just a mental problem. I have the notes here; I copied them from my work. You referred to the spillage at the Ariel dam from midnight of December 21 to midnight of December 22. I have it here noted that it would amount to 13,600 acre feet in excess of the natural flow over the said period. In my opinion, then, if the elevation was lowered 3.4 feet, as a matter of necessity the lower part of the river would be burdened with 13,600 acre feet of water in excess of the natural flow; that was over a 24-hour period.

One second foot of water over a period of 24 hours will cover two acre feet. That is the volume, we call it; the other is the flow. When you speak of the flow of water you mean cubic feet per second. If you want it measured in capacity, that will be two acre feet in 24 hours. The excess was 13,600 acre feet, in excess of the natural flow in 24 hours. To convert that into second feet, divide by 2; that would be 6,800 second feet in addition to the natural flow of the stream. When we speak of that we always mean over a 24-hour period. The statement was, that it was a 24-hour period near the time of the peak flow that was spilled out of the dam.

I heard the testimony that the average or mean flow in second feet on December 22, 1933, was 114,000 cubic feet per second. The maximum was of course much greater than the mean; it always is. I have the maximum [136] flow right here before me,

(Testimony of W. J. Roberts.)

—a certified copy of the Federal Government, for the year ending September, 1934, which goes back to October, November and December, 1933, and that was the period you want to cover, the average for the 24 hours on December 21st, up to midnight, was 114,000 and the maximum was 129,000 cubic feet discharge, cubic feet per second.

I know only approximately what the height of the dam is; I think it is 235 feet. I think they use the U. S. G. S. datum, which is the mean sea level. I do not recall the elevation at the bottom of the dam with reference to sea level; I don't think it has anything to do with the problem. The water did not spill over the dam; it spilled down the spillways.

I have viewed the Ariel dam, and have seen the gates. I have not observed the gates in that dam structure. I know the size of the gates; I have a drawing of them. They are the ordinary radial gates that are closed and opened as needed. As the gates are opened the water would fall from the bottom of the gate to the bottom of the river. I couldn't say right off-hand how far that is. I think I could answer that if I would review the drawings of the book, because if I carried all the figures that I use daily I would have to have a book to keep account of them. I have the openings, the size of all these five gates, and if you want me to read it to the jury—they were made by authority. As to how far the water falls,—well, these gates open—the normal storage level is 30 feet above elevation 205 feet.

(Testimony of W. J. Roberts.)

These notes to which I am referring were not made upon the hearing; these are the drawings of the structure of the gates and the dam; they were made by my assistant under my direction about April, 1934; I was there at the time they were made. I might add to that, to make it clear to the court and the jury, if it is permissible, that there were obtained from the Hydraulic Engineer of the State of Washington, the notes about the size and openings, and they agree, accord, exactly, with the testimony that has been given here. [137] I got them from the records myself. There are five gates. When these gates are wide open the water falls from elevation 205 to the bottom of the river channel; which I cannot tell what its elevation is,——.

As to what effect that fall would have on the lower stream,—well, the falling of that water adds to the water of that stream. If you mean as to velocity or impact, or something like that, you may know that water is very inelastic, and that it will have a considerable slow-down before it goes very far from the tailrace—we will call it, because that is what it is, a tailrace. It would have some effect on the velocity of the stream; increase it a little. The more slope, to explain my answer, the steeper the slope of the stream, the swifter the velocity of course. In my opinion the mean discharge of 114,000 cubic feet per second would have sufficient force to be a competent force to cut away land, with the velocity that the stream has. I want to explain, I think the Court will permit me to do

(Testimony of W. J. Roberts.)

that. The erosion depends of course upon the velocity of the stream. Erosion on the banks depends upon the velocity of the stream, and not the height of the stream, but the higher—the fuller the stream is, the more water flows, and then the swifter it becomes. They go together.

Cross-examination by Mr. Evans

If I go over all my experience in hydraulics, it will cover a period of more than forty years. As to what my experience has been—well, sewerage in the big cities of New England; sewers, Boston, Massachusetts, and Ashland, New Hampshire. I never had charge of the construction of a power plant, no; sewers; you have to know the velocity of that to know the diameter to build it. I said I had something to do with the power plant at Centralia; that is a little power plant. They take the water out of the Nisqually River, the same as the City of Tacoma does; I was the chief engineer of that: that is all. I made the plans. I don't just remember how large a plant that was, but I think it was about 2,000 H. P. The dam there is a very low dam, compared to the Ariel dam. I think it was about 10 feet high. [138] It was not an earth dam; it was a timbered crib dam. As to whether between rock walls or earth walls,—gravel, I would say a hardpan. The Nisqually River has a very steep slope. This water was taken from the Nisqually River, and Nisqually River has a very steep slope, so in four or five miles of channel it would have about

(Testimony of W. J. Roberts.)

200 feet to fall on the water wheels. The dam was about 12 or 14 feet high overall. I think it had a flood gate. It is six years ago, and I have have a good many other things to contend with since then. I cannot say definitely, but I think there is a flood gate. I have been doing hydraulic work every year since I graduated at M. I. T. in 1891, 44 years ago.

I went up to the Ariel dam in order to prepare myself to testify in this case, a little more than a year ago, and again this year, on the Friday before the case was taken up on Tuesday. I spent an entire day there on the first trip. I got in on the dam, between the parapet and the top of the dam. I could not say who let me in there; I could not even say whether a gate was unlocked to let me in; I made a request, it was granted, and we had no trouble about seeing what we wanted to see. I did not investigate the character of the dam. I did not spend my time looking up the operation of the gates; I did not pay any attention to them while I was there.

We went down the river from there to the Grieger place; we followed the road down to Woodland, and then came up from Woodland to the Grieger place and went all over the Grieger place. I did not make any survey down there, or have any survey made under my direction. I did not have any cross section made at or near the Grieger place, or at any place. I did not have any measurements made which would show me the spread of the water after it gets on to the Grieger place.

(Testimony of W. J. Roberts.)

As to my knowledge of the elevation of the dam, I know only what the authorities have prepared and show here. As to whether I know the elevation of the Grieger place of my own knowledge,—well, I think I can give [139] it to you, if I take time enough, from one of these quadrangle sheets. I have one for Clark County. I have investigated it but I did not commit anything to memory. I can find it on some of the maps I have here. As to what I would have to do to determine the difference in the elevation of the dam and the Grieger place,—why, every government map I have has "BM" on it, and you know what that means. It means Bench Mark, and the elevation is written alongside of it. As to whether referring to it now, to tell you the difference in the elevation between the Grieger place and the base of the dam,—I cannot tell about the base of the dam; the top of the dam. Call the top of the overflow 205. If I can have that quadrangle sheet of Mt. St. Helen's area I can tell you the drop from the 205 foot elevation on the dam, between that and the Grieger place. I think that forestry map would be all right, if I could be excused a minute, the Columbia National Forest. They have all kinds of bench marks. Now, this is called the south Mt St. Helen's quadrangle. Now there is Mt. St. Helen's (indicating on map). The map I am referring to now is a Federal Government map that is published under the authority of some authority at Washington, D. C. It is called the Mt. St. Helen's Washington Quadrangle.

(Testimony of W. J. Roberts.)

(Thereupon a government map of the Mt. St. Helen's quadrangle was admitted in evidence and marked Plaintiffs' Exhibit 19.)

Well, pointing out to the jury, there is Mt. St. Helens, and the map is identified at the bottom as the Mt. St. Helens Quadrangle. Now, I have with me also the Mt. Adams Quadrangle, which is farther east than Mt. St. Helens. The Lewis River, well, I guess I am going too far; you want to know the difference in elevation at the Grieger place and at the 205 foot level on the dam. I don't think it is shown on here, but here is just about three miles above. Grieger's place is just about four miles above Woodland, and Woodland is not on this map. It is on a county map which I have here, which I can lay before the jury. It is really a better one to illustrate it, and then I will pick out the elevation on this, to point out; let's have the [140] larger map. (Plaintiffs' exhibit No. 16.) There is Woodland, Washington, Pacific Highway Bridge across the Lewis River at Woodland (indicating).

Well now I have to have that quadrangle sheet to get the elevation; I said that before I began. I will give you the difference in those two elevations. I got to find it on this, because I am not accustomed to reading these little maps frequently. Well, this quadrangle sheet does not show it. I thought it did. I will be prepared to answer Mr. Evans's question in the morning. I will have access to these exhibits between now and 10 o'clock in the morning.

If water is spilled into a pool of water with considerable depth, like the dam or like Lake Merwin,

(Testimony of W. J. Roberts.)

or any pool, it tends to stop the speed; sure, that is true. I noticed a very deep pool in that river immediately below the spillway; that would tend to slow the velocity; I think there are several pools along there. As to whether those would all tend to cut down the velocity,—now, the tendency to change the velocity depends on the relative volume of water going into that pool, and its velocity and the size of the pool; tell me the size of the pool and tell me the volume going down, and I will try and give you a direct answer.

I do not know the difference in elevation in the base of the spillway at the Ariel dam and the line of Grieger's place where the river first gets to it. To figure any velocity of water you have to know the head, the course of the stream, the elevations of the bed of the stream, the width and condition of the banks; there is a lot of difference between the maximum velocity and the mean velocity. As to whether we couldn't tell anything about the mean velocity of a stream flowing, without a cross section, —well, if you had the usual equipment that the water supply department has in this building, we would measure the cross section at intervals of five or ten feet, according to the size of the stream, and drop the little apparatus in there and get the velocity of each particular section and add them all up; integrate [141] them. As to whether an engineer couldn't give an opinion on the velocity of water without that, why, he certainly could. That would be a computed velocity. Every irriga-

(Testimony of W. J. Roberts.)

tion ditch and canal is treated as though you knew something about hydraulics, and that is the slope it has. To compute it you have to know the slope. To estimate the quantity of water flowing you have to know the slope. If you don't know the drop, in other words the slope, you can't figure the velocity. The slope is the difference in the elevations at the two points, divided by the horizontal distance. I have not made any such measurements or computations in this case.

114,000 cubic feet per second equals 228,000 acre feet. I think the testimony yesterday was that for the 24-hour period from midnight of the 21st to midnight of the 22nd, 13,600 acre feet, or a drop of 3.4 feet in the lake occurred in the 24 hours. As I understand the records, I testified that the total acre feet for that day was 228,000, from midnight to midnight of the 22nd, and I testified that the surplus flow for the 22nd was 13,600. As to what percentage of 228,000 acre feet, 13,600 second feet is—it is approximately 16 per cent; I was a teacher of mathematics; I can certainly figure percentage. Whether I am satisfied with the answer of 16,—well, to the nearest unit; I don't go into the decimals. I want to say now that 13,600 is 16 and a fraction per cent of 228,000. 10% of 228,000 is 22,000. 5% is 11,000. 13,600 would be a little over 5%; it looks like that 16% was an error. My usual conveniences are not at hand, and so—if you will bear with me I think I will——; that would be say

(Testimony of W. J. Roberts.)

about 6%. It is a little less than 6. I am just using integers now. It is just a little less than 6.

"Q. All right. Now, Mr. Grieger was asked yesterday about the depth of the water on his place on the 21st. I am asking you this question for illustration. He testified that at one time there was five or six feet of water on his place on the 21st. In inches, if we added 5.96% to it, how much of the six feet of water did we [142] put there in excess."

"A. I didn't put that down, so I would have to put it down on paper—to——"

"Q. If the water is six feet deep on the Grieger place——"

"A. Now, are you going to give it to me in inches? You have to give your figures in the same denominations."

He said six feet; that is 72 inches on Grieger's place. If of that 72 inches we created 5.96 per cent, that is approximately 6%, and I will use the 6 as a multiplier first,—(witness computing) a little over 4 inches; so that if there was 6 feet of water, the average extra throughout that 72 was a trifle over 4 inches.

I am familiar with the Lewis River valley; I have known it since I built that bridge at Woodland 24 years ago. I know the character of the soil and the river just reasonably well. From my observation there, as an engineer, I should say that river has traveled in different channels throughout time.

(Testimony of W. J. Roberts.)

When I was down there we went up on the road in front of Mr. Grieger's house across the river on the Clark County side where his farm is; we came out from that road from Woodland. I was over at his house. I could not say that from there I observed where that river in time has traveled clear across that valley. I looked at the recent actions of the water. It was very apparent that it had eroded a large amount of soil on his farm. I could not say as a fact that on Mr. Grieger's hundred acres, the river has traversed it at different places throughout the years, except that I know the habits of rivers is to do that sort of thing. The character of that soil on Mr. Grieger's farm, he said was silt loam; I know what that is. It is the best bottom land that we have. Silt soil is the finest matter that floats, you might call it, the top in running stream; it is light. That soil got there from the erosion of the land above it. Doubtless it was brought in by flood waters and settled there. I would say that the [143] very land that was washed out was, prior thereto, washed in there by the same process. That type of soil is bound to be subject to erosion. As to whether as soon as you start water across it, some of it is going to move,—well, the erosion comes slightly in a different way. If it is flowing over the top and the top is seeded over, so it does not erode. It has to get an action, undercutting, so it caves off and then washes away. I will say, however, that silty loam is readily subject to erosion, but less so when it has sod growing

(Testimony of W. J. Roberts.)

upon it. It is the cutting element of the water, in the bank, that does it; the water comes along, as it comes up under the bank it cuts in and as it goes over it cuts a little more, and sloughs it off; that is the way it works.

"Q. I think you testified yesterday the greatest erosion is the peak, and when it is at the peak there is the most erosion, because the greater volume of water, the more velocity, so it is bound to happen, the greatest erosion happens when it gets up to the peak?"

"A. When it——

"Q. When it reached the peak and started down, then the erosion will go down accordingly, doesn't it?

"A. Yes, I think that is logical.

"Q. That is true, isn't it?

"A. Yes.

"Q. Now, the cutting elements in the water, is the sediment, the sand and the rocks, and stuff that it carries, that helps with the erosion, doesn't it?

"A. That helps the erosion—the rocks?

"Q. Yes, increases it, doesn't it, the sandier the water is the more stuff of that character, sand, rocks, and gravel going down in the flood, isn't that true?

"A. No, sir, that is not.

"Q. That doesn't have anything to do with it? [144]

"A. I would say not."

(Testimony of W. J. Roberts.)

It is the volume of the water, and the velocity of it, that does the erosion. As to whether the sediment, sand, or rocks, whatever is in the water has nothing to do with the cutting capacity,—there cannot be very much erosion until the river begins to erode——. As to whether drift, timber and logs, and all of that stuff, eroded above there and brought down, would have any influence at all,—well, it would bump into a tree, on the shore, and bump it off and help erode more.

I went up and saw Lake Merwin, the storage reservoir. I am not sure we went clear to the head of the lake. I can't say whether we went up ten miles, a little more or a little less; I saw some drifts. If the dam had not been there, any drift flowing in the river would have flowed down the river until it lodged. I cannot say then to that extent that the dam was a protection to Mr. Grieger's land. As to whether it was not any benefit to him to keep 200 acres of drift away from him,—there is more to the problem than the drift; I would say the dam was not a benefit to him. If this heavy drift was up above, it was evident it was washed up there too, above the lake, certainly; and the water would be very heavy water that washed it away. It is a fact that Lake Merwin in that situation acted as a settling basin and saved a lot of that stuff going down to Mr. Grieger's. That might have been a benefit to him.

I do not know how many second feet the river

(Testimony of W. J. Roberts.)

would have to flow to overflow the bank at the Grieger place; I cannot compute it without more data.

"Q. It is a subject of computation that you could have prepared yourself, couldn't you?

"A. Prepared myself?

"Q. Yes.

"Well, I think—— [145]

"Q. In other words, if Mr. Lord had said to you, 'Mr. Roberts, I want you to go up there and tell me the quantity of second feet flowing there and over my client's farm,' you could have gone up with your instruments and come back and said to him, 'Mr. Lord, that river will overflow at so many second feet,' couldn't you?

"A. Well, it would take considerable study to do it.

"Q. Yes, but you could do it, couldn't you?

"A. Approximately. I don't think you could get down to the inches."

You could get it within a few thousand second feet; and a second foot is two acre feet.

As to what velocity water has to travel to cause erosion in silty loam,—I am going to answer the question all right; the velocity of the water against a bank, to bring down gravel is very fast; but to erode a bank along the river bank, four, five or six, or eight or nine or ten feet per second will do it; I am talking about the river bank. As to what speed

(Testimony of W. J. Roberts.)

it would take to start erosion against the banks anywhere at the Grieger place,—a vertical bank will erode faster than it will on a flat pond that has been filled up with sand, or low ground filled up with sand, or silt as you call it. I went down and went over the Grieger place. I saw that point that comes up in the bend of the river where the wash went through, and back of that, is a low place. I think the land belongs to another party. I understand that there was a jetty in the river there at the Grieger place, and back of that was somewhat of a slope, and some gravel, and the water went across that gravel and from that traveled on to Mr. Grieger's silty loam, and up to the bank on that wooded place. I understand that that was a silty loam soil all across there to the bank. I would say that erosion first started on the edge of the river; on the edge of the old channel; and that would be pretty early in the flood stage. As the water came up the erosion would come up a little farther. I would say that silty loam would start to erode at four or five feet per second. When you speak of velocity it is always in lineal feet per second. [146]

As to whether the wash started when it reached the velocity of four feet per second,—I would say it started a little lower than that, but it is pretty accurate; a little lower than that.

As to whether in my opinion when they started to spill, when the river was flowing 10,000 cubic feet per second, and that got to Grieger's place, the first erosion started around that point some-

(Testimony of W. J. Roberts.)

where,—I would not say that 10,000 feet per second would have done very much damage; I don't think it would have caused any erosion. I don't think 15,000 would start erosion at the Grieger place in the silty loam. As to whether 17,000 cubic feet per second would cause erosion,—not as I saw the channel the day I was up there after the erosion had taken place. I never saw the place before the erosion began.

"Q. All right, you have given your client an opinion now on this, and I have a right to know the basis of it.

"A. All right.

"Q. Would erosion start when the stream is flowing 17,000 cubic feet?

"A. What is the area of the cross section?

"Q. Did you have that when you testified yesterday?

"A. No, sir.

"Q. Then, you made a mere guess yesterday?

"A. At what?

"Q. Telling them when there was erosion.

"A. Well, the visibility of the farm eroded, and washed away.

"Q. So you know that is all you have got to say, you know when water causes erosion because you can see it afterwards, is that true? You as an engineer haven't any idea of what

(Testimony of W. J. Roberts.)

volume of water would be necessary to start erosion?

"A. Well, volume is composed of two elements.

"Q. All right. [147]

"A. The velocity and the cross section of the channel. You talk about cubic feet per second. You have to have a volume, for cubic feet."

I am somewhat familiar with the channel just above the Grieger place just from the observation I made a few days ago. As to how many second feet from my observation and my experience as an engineer, I think that channel will carry just above the Grieger place where there is no wash, just where it enters back of his line, where the big wash started over there, I would say that the capacity of that in second feet would be something under a hundred thousand. When you get up to something under a hundred thousand, and it gets on to the bank, erosion would start. A hundred thousand at the jetty would go over Mr. Grieger's place, and erosion would start when it went over. I think erosion would start long before you got to a hundred thousand. I don't think erosion would start when spillage was around thirty thousand cubic feet per second; I think it might start at fifty; there are many conditions. That river is not a straight channel like an irrigation canal, and bending at right angles, an ox-bow and horse-shoe bend.

(Testimony of W. J. Roberts.)

"Q. Yes, with your experience as an engineer with that condition there, that straight chute of water, and a turn then where the jetty, and the high bank and all on one side, and the low place on the other where the swale went through.

"A. Yes, sir.

"Q. Isn't it your opinion that erosion would start at least by 50,000 second feet?

"A. How much?

"Q. 50,000 second feet?

"A. Yes, sir, I think it would start somewhere there.

"Q. As you go from fifty thousand up to fifty-five, sixty, sixty-five, seventy, seventy-five and eighty, erosion will increase with the depth of the water, because of the weight, wouldn't it?

"A. Increase with the depth of water? It would increase with the velocity of the water. [148]

"Q. It is the depth that makes the velocity. The weight is what makes velocity?

"A. The velocity?

"Q. Yes.

"A. The slope of the channel and nothing else.

"Q. And nothing else?

"A. And nothing else.

"Q. Erosion, however, increases with quantity of water on that slope, doesn't it?

(Testimony of W. J. Roberts.)

"A. Yes, sir, the higher the channel the higher the velocity.

"Q. The greater the discharge, the greater the erosion?

"A. Yes, sir.

"Q. I think we understand each other. As we progressively approach from fifty thousand upwards, there was an erosion all the way?

"A. I would say especially in the tortuous bend.

"Q. And this was a tortuous bend where this went through?

"A. Yes, sir, plenty of it.

"Q. Very subject to erosion, wasn't it?

"A. Yes sir."

I heard Mr. Calkins, the government expert, testify; most of it. I heard him testify that the peak of the flood was around midnight of the 21st, or just after midnight on the 22nd, was 129,000 cubic feet per second.

"Q. Now, let me get this, the gates were opened gradually until we got to the last gate, and it was a few feet closed, a few feet—partially closed—a few feet partially opened and a few feet of it was closed. We opened that so we finally succeeded in having all the gates open at 12:16.

"A. At 12:16 after midnight?

"Q. Yes.

(Testimony of W. J. Roberts.)

"A. On the 22nd. [149]

"Q. Now, if that happened to be also the peak of the flood, then the water was the highest then that it could get, wasn't it?

"A. Very likely.

"Q. So that your discharge at that time, with all of the gates open, right then would be the greatest discharge on the lake, wouldn't it, of any time?

"A. Yes, sir.

"Q. So that it was the accumulation of water in the dam on the 21st—on the 20th?

"A. 22nd.

"Q. On the 21st, the peak was at midnight, the 21st?

"A. Yes, just before the 22nd.

"Q. So that when we opened the gates at midnight or sixteen minutes after, the water that caused that peak was the water in the lake at that time, wasn't it?

"A. Yes, sir.

"Q. So that from then on any surplus spillage was water which came into the reservoir after twelve o'clock midnight, wasn't it?

"A. It looks that way.

"Q. Well, that is correct, isn't it?

"A. I think so."

Re-direct Examination by Mr. Anderson

I would say that the raising of the water to the elevation of 237 feet back of the dam, and allowing it to drop between three and four feet in elevation

(Testimony of W. J. Roberts.)

in a period of twenty-four hours, would have some effect on Mr. Grieger's land. I never measured the channel below the dam; I never had occasion to survey it, either for depth or for width. I don't know the sectional area of that channel. As to whether I would be able to testify with any degree of accuracy at all without having possession of those figures, as to how much water it would take to overflow the banks, or to wash away Mr. Grieger's land, —you couldn't do it without some computation that covered the question [150] you asked; in fact, I wouldn't know anything about it all without those figures.

As to the effect upon the plaintiff's land of discharging water at the peak at the rate of 129,000 cubic feet per second,—when the gates are opened you are piling more water on top of the flood peak through these sluice gates operated by the managers of the dam, the power company.

Re-cross Examination by Mr. Evans

I think 129,000 was the flood peak. 129,000 cubic feet per second is the gauging made by estimation of the United States Geological Department, their office being in this building, and that was the flow at the Ariel dam, at the gauging station, I should say. That is what they call the flow that went down the river, the Ariel gauging station, and that is the peak that did go down. If I said that was added to some flood condition, I would like to correct myself; I think I want that answer to stand.

Plaintiffs rest.

(Thereupon the following proceedings were had:)

(MOTION FOR NON-SUIT)

THEREUPON, plaintiffs having rested, the defendant moved the court for a judgment of non-suit upon the following grounds, severally:

First, a total failure of proof of actionable negligence.

Second, that the evidence conclusively shows that there was unprecedented flood which caused the damage to the plaintiffs' property, regardless of any conduct of the defendant.

Third, that the evidence affirmatively shows the exercise of reasonable care by the defendant.

Fourth, that any verdict permitted to be returned to the court by the jury on the evidence as it now stands would be purely speculative and [151] without basis for computation.

THEREUPON defendant's said MOTION FOR NON-SUIT was by the Court DENIED.

To which ruling of the Court denying defendant's motion for a non-suit, an EXCEPTION WAS DULY TAKEN AND ALLOWED.

THEREUPON, without offering any testimony, the DEFENDANT RESTS.

THEREUPON, by agreement of counsel, plaintiff's Exhibit No. 10, a chart or graph was admitted in evidence and marked plaintiffs' Exhibit No. 10.

(Transcript of testimony, 426; said Exhibit 10 being identical with Exhibits 11 and 12 (Transcript of testimony, 418))

THEREUPON, by agreement of Counsel, Plaintiffs' Exhibit No. 15, a map of the Lewis River region was admitted in evidence and marked Plaintiffs' Exhibit No. 15.

ELLIS & EVANS
JOHN A. LAING and HENRY S. GRAY
Attorneys for Defendant.

[Endorsed]: Lodged Jan. 18, 1936. [152]

United States of America
Western District of Washington—ss.

The foregoing bill of exceptions having been lodged by the defendant with the Clerk of the above entitled court on the 18th day of January, 1936, and duly presented to the undersigned Judge for certification on the 27th day of January, 1936, together with the plaintiff's written waiver of any and all objections to said bill and of any and all notice of the time of settlement thereof, filed Feb. 8th, 1936.

IT IS NOW AND HEREBY CERTIFIED That the foregoing, appearing on pages 1 to 111, inclusive, together with the following described Exhibits: 1 to 10, inclusive, and 13 to 19, inclusive, and A-1 and A-2, referred to therein, which original Exhibits have been ordered forwarded by the Clerk of the District Court of the Western District of Washington to the Clerk of the Circuit Court of Appeals for the Ninth Circuit, is a statement of all material evidence admitted and all material proceedings, rulings and exceptions taking place upon the trial. The instructions of the Court are not included, but in view of the present assignments of

error, the instructions are not considered upon the present record material.

Accordingly, said bill of exceptions is hereby approved, allowed and settled and made a part of the record herein.

Given under the hand of the Judge of said Court before whom said proceedings were had, this 8th day of February, 1936.

EDWARD E. CUSHMAN
United States District Judge

[Endorsed]: Filed Feb. 8, 1936. [153]

[Title of Court and Cause.]

STIPULATION FOR TRANSCRIPT OF RECORD ON APPEAL.

IT IS HEREBY STIPULATED by and between the respective parties to the above entitled action, by their undersigned attorneys of record herein, that the transcript of the record on appeal to be prepared by the Clerk of the above entitled court and transmitted to the United States Circuit Court of Appeals for the Ninth Circuit, at San Francisco, California, shall consist of the following papers and documents on file in the office of the Clerk of the above entitled Court:

1. Plaintiffs' second amended complaint.
2. Defendants' answer to second amended complaint.
3. Plaintiffs' reply to said answer.

4. Verdict of the jury.

5. Petition for new trial filed October 19, 1935.

6. Minute order entered November 23, 1935, denying motion or petition for new trial.

7. Judgment.

8. Stipulation for extension of time for settlement of bill of exceptions, dated October 11, 1935 and filed October 15, 1935.

9. Order extending time for preparation and service of bill of exceptions, filed October 15, 1935.

10. Stipulation for extension of time for preparation and settlement of bill of exceptions and for extension of term of court, dated December 19, 1935 and filed December 23, 1935. [154]

11. Order extending time for preparation and service of bill of exceptions to February 4, 1936, filed December 23, 1935.

12. Petition for order allowing appeal.

13. Assignment of errors on appeal.

14. Order allowing appeal.

15. Bond on appeal and supersedeas, with court's approval thereon endorsed.

16. Citation on appeal, with admission of service thereon.

17. Stipulation for extension of term dated January 24, 1936, filed January 27, 1936.

18. Stipulation for transmission of original exhibits, dated January 29, 1936 and filed February 1, 1936.

19. Order for transmission of original exhibits, filed February 1, 1936.

20. Motion for extension of term, filed February 4, 1936.

21. Order extending term for thirty days, filed February 4, 1936.

22. Waiver of objections to bill of exceptions and consent to settlement thereof, dated February 6, 1936.

23. Bill of exceptions.

24. This stipulation.

25. Praecipe for transcript of record to which this stipulation is attached.

Dated this 6th day of February, 1936.

WM. P. LORD
BEN ANDERSON
Attorneys for Plaintiffs.
ELLIS & EVANS
HENRY S. GRAY
Attorneys for Defendant.

[Endorsed]: Filed Febr. 8, 1936. [155]

[Title of Court and Cause.]

PRAECIPE FOR TRANSCRIPT OF RECORD ON APPEAL.

To the Clerk of the Above Entitled Court:

You are hereby requested to prepare, certify and file in the United *States* Circuit Court of Appeals for the Ninth Circuit, pursuant to an appeal allowed in the above entitled cause, a transcript of

record on appeal and to include in such transcript of record the several documents filed in your office in the above entitled cause which are listed in the stipulation attached hereto and filed herewith.

Said transcript of record shall be prepared and certified as required by law and the rules of this Court and the rules of the United States Circuit Court of Appeals for the Ninth Circuit, and together with the original exhibits, to-wit: Plaintiff's Exhibits numbers 1 to 10, inclusive, and 13 to 19, inclusive, and defendants' Exhibits A-1 and A-2, be filed in the office of the Clerk of the Circuit Court of Appeals for the Ninth Circuit, in San Francisco, California.

Dated this 6th day of February, 1936.

ELLIS & EVANS
HENRY S. GRAY
Attorneys for Defendant.

[Service].

[Endorsed]: Filed Feb. 8, 1936. [156]

[Title of Court and Cause.]

CERTIFICATE OF CLERK TO TRANSCRIPT OF RECORD.

United States of America,
Western District of Washington—ss.

I, Edgar M. Lakin, Clerk of the United States District Court for the Western District of Washington, do hereby certify and return that the foregoing typewritten transcript of record consisting of

pages numbered from one to 156, inclusive, is a full true and correct copy of so much of the record, papers and proceedings in the case of Fay M. Grieger and Lois Grieger, Plaintiff and Appellee vs. Inland Power and Light Company, a corporation, Defendant and appellant, cause No. 8352, in said court, as required by praecipe of counsel filed and of record in my office in said District at Tacoma, and that the same constitutes the record on appeal from the judgment of said United States District Court for the Western District of Washington, to the United States Circuit Court of Appeals for the Ninth Circuit.

I further certify that I herewith attach and transmit the original citation in this cause, with acceptance of service thereon.

I further certify, that under separate cover I am forwarding to said Circuit Court of Appeals, the original exhibits, called for in stipulation and order for transmission of original exhibits, as filed in said cause and shown herein.

I further certify that the following is a full, true and correct statement of all expenses, fees and charges incurred and paid by and on behalf of the appellant herein for making of the appeal record, certificate and return to the United States Circuit Court of Appeals for the Ninth Circuit, to-wit:

Appeal fee	$ 5.00
Clerk's fee (Act Feb. 11, 1925) for making record 435 folios @ 15c	65.25
Clerk's certificate to this record	.50

Clerk's certificate to exhibits..... .50

Total $71.25

I further certify that the cost of preparing the record on appeal amounting to $71.25 has been paid to me by the appellant.

IN TESTIMONY WHEREOF, I have hereunto affixed the seal of said Court, at the City of Tacoma, Washington, this 15 day of February, 1936.

EDGAR M. LAKIN, Clerk,
By E. W. PETTIT, Deputy. [157]

[Title of Court and Cause.]

CITATION ON APPEAL.

UNITED STATES OF AMERICA:

To Fay M. Grieger and Mary Lois Grieger, Greeting:

You are hereby notified that in a certain action in the District Court of the United States for the Western District of Washington, Southern Division, wherein Fay M. Grieger and Mary Lois Grieger are plaintiffs and Inland Power & Light Company, a corporation, is defendant, an appeal has been allowed the defendant to the Circuit Court of Appeals for the Ninth Judicial Circuit, and YOU ARE HEREBY CITED AND ADMONISHED to be and appear in said Circuit Court of Appeals in the City of San Francisco, State of California, within thirty (30) days from and after the date of the signing of this citation, to show cause, if any there be, why the judgment appealed from should

not be corrected and speedy justice be done to the parties in that behalf.

WITNESS the Honorable Edward E. Cushman, Judge of the United States District Court for the Western District of Washington, Southern Division, this 20th day of January, 1936.

EDWARD E. CUSHMAN
United States District Judge.

[Service.]

[Endorsed]: Lodged Jan. 20, 1936. [158]

In the Circuit Court of Appeals of the United States for the Ninth Circuit

No. 8130

FAY M. GRIEGER and MARY LOIS GRIEGER,
Plaintiffs and Appellees,

vs.

INLAND POWER & LIGHT COMPANY,
a corporation,
Defendant and Appellant.

STIPULATION RE PRINTING OF RECORD

IT IS HEREBY STIPULATED AND AGREED by and between the parties to the above entitled cause, through their respective counsel, that in the printing of the record under the supervision of the clerk of the above entitled court, there may be omitted all titles, captions, jurats and verifications.

IT IS FURTHER STIPULATED that as to all exhibits admitted in evidence on the trial of said cause in the lower court, and which by order of the Judge of the lower court were ordered transmitted by the clerk of said court to the clerk of the above entitled court, the clerk of said Circuit Court of Appeals may cause to be reproduced and incorporated in the transcript to be printed by him such of said exhibits as he may find are susceptible of being reproduced in said printed transcript, but that all of said exhibits in said cause, whether or not reproduced in said printed record, may be referred to in briefs or argument and may be considered by the court on said appeal with like effect as though reproduced and contained in said printed record.

Dated this 25th day of February, 1936.

WM. P. LORD
BEN ANDERSON
Attorneys for Plaintiffs-Appellees
LAING & GRAY
JOHN A. LAING
HENRY S. GRAY
Attorneys for Defendant-Appellant

ORDERED that original exhibits need not be printed or reproduced in printed transcript.

CURTIS D. WILBUR
Senior U. S. Circuit Judge.

[Endorsed]: Filed Feb. 27, 1936. Paul P. O'Brien, Clerk.

[Endorsed]: No. 8130. United States Circuit Court of Appeals for the Ninth Circuit. Inland Power and Light Company, a corporation, Appellant, vs. Fay M. Grieger and Mary Lois Grieger, Appellees. Transcript of Record. Upon Appeal from the District Court of the United States for the Western District of Washington, Southern Division.

Filed February 17, 1936.

PAUL P. O'BRIEN,

Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.